THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—34TH YEAR. SYDNEY, SATURDAY, MARCH 22, 1947. No. 12.

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MR. JACOB MOUNTGARRET, R.N., THE PIONEER SURGEON OF VAN DIEMEN'S LAND, 1803–1828.

By W. E. L. H. CROWTHER,
Hobart.

Introduction.

THE prologue to the settlement of Van Diemen's Land at Risdon, on the river Derwent, and at Port Dalrymple is written in the journals of Lieutenant Matthew Flinders and Mr. George Bass, Surgeon, R.N. They are of especial interest to our profession as the former was the son and grandson of surgeons and Mr. Bass practised in Lincolnshire before being commissioned as a surgeon to the Royal Navy.

First with the *Tom Thumb*, an open boat of eight feet, and after in another, a very little larger, the two friends examined the coasts of New Holland to the south and west as far as Westernport. On their return to Sydney, after these very hazardous expeditions, the Governor, Captain Hunter, R.N., showed his appreciation and confidence by placing the sloop *Norfolk*, then just completed, at their disposal for a limited period. Leaving Port Jackson on October 7, 1798, within three months they had completed the first passage of the straits (named by Hunter after Mr. Bass), as well as the first circumnavigation of Van Diemen's Land and as close a survey of the Tamar and estuary of the Derwent as time permitted.

Mr. Flinders (his promotion to lieutenant had not yet been made) was an executive officer, responsible for the conduct of the expedition and the surveying and cartography. Mr. Bass, an explorer for the sheer delight of the adventure and the opportunity, not only wrote the general description of the islands and inlets visited, but described in some detail the broad scientific aspects of these localities and their flora and fauna.

The first half of this address, in which parts of the narrative are given, is concerned in some detail with the extraordinary results achieved. It is particularly stressed that when it became imperative for Captain King to occupy Van Diemen's Land, the sites selected for the proposed settlements were in each case those indicated by Mr. Bass as best fitted for such a purpose. Had the *Norfolk* been longer at their disposal, closer investigation would have disclosed areas better suited for permanent occupation, but as it is, the work accomplished on this short voyage determined the future development of Tasmania.

With the arrival of the sloop at Sydney Cove on January 12, 1799, the splendid collaboration of the two friends came to an end. Lieutenant Flinders returned to England where the influence of Sir Joseph Banks brought about his appointment to the command of His Majesty's Ship *Investigator*. In this ship he completed the classic survey of the coasts of New Holland before his seagoing career was terminated by the tragic detention at Mauritius. Mr. Bass, who had resigned from the Navy and relinquished the practice of his profession, set off from Sydney on his brig *Venus* for a trading voyage to Tahiti and the South Seas. From that summer day in February, 1803, nothing was heard of him, nor has the mystery of his disappearance ever been solved.

The Settlement at Risdon and Mr. Jacob Mountgarret.

It was not for four years after the return of the *Norfolk* to Port Jackson that the results of Mr. Bass's work became apparent. In the interval Captain P. G. King had replaced Hunter as Governor of New South Wales and increasing anxiety as to the intentions of the French expedition, led by Baudin, then in Australian waters,

[1] This address was prepared for the Royal Australian Historical Society and read to its members at their meeting of October 29, 1946, by George Mackaness Esq., O.B.E., Litt.D. A considerable part, with a long introduction concerning the exploration of the coasts and seas of Van Diemen's Land by Mr. George Bass, Surgeon, and Mr. Matthew Flinders, was presented to the Tasmanian Fellows of the Royal Australasian College of Surgeons at their twelfth annual State meeting on August 17, 1946.

brought about his decision to form a settlement at the Derwent and Port Dalrymple.

Lieutenant John Bowen, R.N.,[1] of His Majesty's Ship *Glatton*, who had volunteered for colonial service, was selected to command the expedition and arrived at Risdon Cove on the whaler *Albion* on September 12, 1803. The *Lady Nelson*, survey ship, preceded him by four days. His party comprised 49 in all, including military personnel and convicts. With him were Mr. Jacob Mountgarret, R.N., surgeon, and a storekeeper. The arrival later of a party under Lieutenant Moore brought the number to over 100. Lieutenant Bowen was at this time little more than eighteen years of age and had had only a few months' experience in Australia. It was his great misfortune to have as his military guard a detail of the infamous New South Wales (Rum) Corps, who proved later to be independable, and in some instances no better than the convicts they were to control. Collins[2] described the latter as a worthless and desperate set of wretches and mostly of the class of United Irishmen. Bowen had been given discretion as to where he should set up his camp, but does not seem to have made any exhaustive search before deciding upon the site at Risdon, indicated by Mr. Bass, where water was to be had. To this settlement he gave the name of Hobart. All the nearby eastern bank of the Derwent was then, and for many years after, densely timbered by sheoaks, while the country inland was more open and given over to eucalypts. The creek dividing the camp was a lively stream, and a good-sized boat could make its way to the landing steps, which still remain. Today it would hardly float a punt.

As a result of the youth and inexperience of Commander Bowen (he was permitted this courtesy rank to enhance his authority) and the poor type of convicts allotted to him, little progress was made at the settlement; indeed, Collins states that upon his arrival at Risdon Cove nothing had been done in the way of cultivation on the government account, but that two free men had each prepared five acres for sowing and to these seed wheat was issued, while to the surgeon of the establishment who had about four acres ready, grain for sowing was also supplied.(1) Some work had been done in the way of clearing the land, laying out the camp and erecting a stone storehouse and huts to supplement the tentage.

A very poor plan of Bowen's(2) shows the landing place from which a road or path led inland along the flat, and slightly uphill, to the commissariat store and a rectangular plot, laid out as a garden. Immediately beyond them were three square huts for the military personnel, and at some distance and towards the creek quarters for the convicts. On the rising ground between the quay and the garden stood the hut of Mr. Mountgarret. Inland and up the valley three more huts, well separated, are shown as belonging to Clark, Birt and Mr. Mountgarret. These it would seem were the three holdings prepared for the sowing. Beyond is the broad valley of East Risdon with the caption "fine valley". It may be assumed that Mr. Mountgarret used the first hut as his residence or official quarters, and the holding further inland for his livestock. A return of September, 1803, shows him to possess one cow, six goats, three sows with sixteen young, three sheep and one ewe lamb.(3)

From the camp, Mr. Meehan did some desultory surveying of the adjoining country, while Lieutenant Bowen made a reconnaissance of the upper reaches of the Derwent, but very little real development took place. The convicts do not seem to have been kept to any steady work, while the soldiery were untrustworthy and vicious. Lieutenant Bowen determined to make an example of one of the guards who had taken part in a robbery of stores, and personally escorted him to Sydney for a court martial. He left his two responsible officers Lieutenant Moore and Surgeon Mountgarret at Risdon, the former in command.

Mountgarret had had wide experience with the Navy during the first phase of the Napoleonic war, but little is known of his early life. In a long detailed memorial, presented to Governor Macquarie on February 6, 1818,(4) we may read something of his story and a good deal of his personality. In it, it is stated:

> Memorialist had the honour to serve in His Majesty's Navy, in the medical department from the year 1790 to 1803, ten years of which period, Memorialist acted as Principal Surgeon.

This is far from being in agreement with an entry on the register of the Company of Surgeons of London (the precursor of the Royal College of Surgeons), dated May 17, 1798, which shows him to have been admitted as a member on that day and at the same time to have qualified as a naval surgeon third rate.[1]

In this memorial, the date of his warrant for His Majesty's Ship *Sincere* is given as 1795 and his posting to the frigate *La Minerve* as three years later. During his service in the Mediterranean, this ship had seen close action with the Spanish frigate *Sabina* and had also taken part in the general action with the Spanish fleet at Cape St. Vincent. With the Treaty of Amiens and the paying off of his ship, Mountgarret had joined His Majesty's Ship *Glatton*, about to sail with 400 male and 200 female convicts to New South Wales, which was safely reached on March 11, 1803.

Mountgarret seems to have had a leaning to the colonial service and promptly accepted an offer to join the expedition preparing to occupy Van Diemen's Land. It will be seen from his reply to Captain King that he was more than content to leave the question of rank and remuneration to the determination of the Home Government.(5)

> Sir, in answer to your letter of the 31 of March, I beg to acquaint you, that I consider myself very much obliged for the appointment of Surgeon to the settlement of V.D. Land and will with pleasure await the determination of His Majesty; nor do I hold Your Excellency at all responsible for any pay whatever that may be granted for my services.

It seems, too, that he had already shown administrative ability, for when it became probable that the expedition of Lieutenant-Colonel David Collins might be diverted to the Derwent from Port Phillip, Lieutenant Bowen was given the following directive.(6)

> Lt. Bowen is to deliver his command to Lt.-Col. Collins; should the latter however decide to settle at Port Dalrymple, Lt. Bowen is to hand over the command of the Risdon Settlement to Mr. Mountgarret until Governor King can make further arrangements: if it is convenient to that gentleman.

Bowen had, as stated, gone to Sydney and it was Lieutenant Moore, acting commandant, who received Lieutenant-Colonel Collins when he arrived at the Derwent. This was on February 16, 1804, the transport *Ocean* having on the previous day come to anchor at Risdon Cove.

Knopwood(7) has left us this record of the ceremony:

> The morn very fine. At 10 the Lt. Governor, Self, and Lt. Lord of the Royal Marines, went on shore to see the settlement formed by Lt. Bowen of the Royal Navy. As we left the ship, Cap. Mertho, of the Ocean Transport, saluted Lieut. Col. Collins the new Governor with 11 guns. When landed we were received by Lt. Moore, the Commandant of the New South Wales Corps, Mr. Mountgarret, the Surgeon, and Mr. Wilson the storekeeper; the camp consisted of 16 privates, 1 Serjant, 1 drum and fife. After examining the camp, gardens, water etc. was the general opinion to be not calculated for a town. At 2 the Lt. Governor returned on board. I dined with Mr. Mountgarret at his house on the N.East side of the river. The watering place is by no means good. Capt. Bowen returned to Port Jackson with an intention of going to England.

On the following day the present site of Hobart was selected as one "well calculated in every degree for a settlement" and on Sunday the nineteenth, the ships

[1] John Bowen, R.N. (1785-1827), arrived at New South Wales on His Majesty's Ship *Glatton*, March 11, 1803. After colonial service, he rejoined the Royal Navy with which he served at Trafalgar and on the East Indian Station. He retired as a post-captain.

[2] Lieutenant-Colonel David Collins, Royal Marines (1756-1810), after considerable service with his regiment, arrived at New South Wales as deputy judge advocate to Captain Phillip. He was first Lieutenant Governor at the Derwent from February 16, 1804, until his sudden death on March 24, 1810.

[1] From a personal communication from W. R. Le Fanu, Esquire, Librarian, The Royal College of Surgeons, England, dated July 3, 1946.

dropped down stream to Sullivan's Cove where next day the settlement of Hobart Town commenced.

Of medical work accomplished at Risdon or diseases encountered, there is no mention in Bowen's brief reports to the Governor at Sydney.

With the arrival of Collins's expedition, Mountgarret's position became uncertain, as is shown in this extract from a dispatch to Governor King:[8]

> Upon my acquainting Mr. Mountgarret that an opportunity would be afforded him of returning to Port Jackson by the Lady Nelson, he informed me that he did not intend to quit the Settlement at present, having a large stock upon his hands which he wished to dispose of. He therefore remains; but I must beg leave to observe to your Excellency, that should it be your intention to withdraw the people now at Risdon Creek, and either add them to this establishment, or wholly remove them to Sydney (the latter of which I should prefer, with some few exceptions) this gentleman, should he then wish to continue here, could only be considered as a settler, my medical staff being complete;[1] and I have no doubt but you would think with me, that it would be an act of flagrant injustice to the medical gentlemen sent hither by the Crown, to receive into the staff of this Colony at the expense of either of them. I feel myself very much at ease with the medical aid which has been provided for me, and do not conceive that for some years to come any additions to them will be requisite.

A reply was received from King dated April 20, directing that Mountgarret's public service at the Derwent was terminated, and permitting him to remain as a free settler or to return to Sydney.

Mountgarret had one very troublesome patient, Mr. John Hartly, whom Collins in a dispatch describes as "as great a villain as can be produced in these Colonies" and who not only gave the authorities great trouble, but seems as well to have been an idle and troublesome settler as well as a persistent malingerer.[9]

Mr. Matthew Bowden, Assistant Colonial Surgeon at Hobart Town, having been instructed by Collins[10] to proceed to Risdon and report on his condition, very properly did so in consultation with Mountgarret. Bowden's finding, in view of the trouble Hartly had given, seems rather an understatement, and the treatment overlenient. He was, it is reported, in a state of debility occasioned as we apprehended "from persisting in keeping his bed . . . the only remedies which the case appeared to require was a nutritive diet with a little wine. I accordingly sent him at twice a gallon of Sherry, 8 or 10 lbs. of rice, and Oatmeal at different times." Mr. Mountgarret, he continued, obligingly said he would call on Mr. Hartly, and he would take care that he wanted for nothing in his power to furnish, and concluded "Mr. Hartly during his *Illness* did not want for any medical treatment or Regimen that the place at that time afforded".

It is of interest that when the *Ocean* arrived at the Derwent there were on board a number of sick of whom Collins[11] reports:

> I availed myself of an offer made by Mr. Mountgarret of accommodating some of my sick in a hut, which could be spared for that purpose, and twelve of them affected with Diarrhœa were put under his care. I am sorry to add that one who I can but ill spare, a Carpenter, has died there, the others are recovering.

Lieutenant Bowen's letters to Governor King are so meagre that apart from these references in the dispatches of Colonel Collins, there is no record of any actual medical work or duties undertaken by Mr. Mountgarret.

Life at Sullivan's Cove and Exploration of the Surrounding Country.

With the establishment of the larger expedition at Sullivan's Cove and return of Bowen to Sydney, Mountgarret found himself a free settler with his small location and two huts at Risdon as well as a boat. To have been allowed the possession of the latter in a penal settlement was a great privilege. In his case it allowed him to visit the new camp at will, as well as to explore the river and estuary of the Derwent. He formed a sincere and lasting friendship with the Reverend Robert Knopwood[1] and we learn much of his comings and goings from the all too brief entries in the diary of the latter. It has already been quoted in regard to Collins's arrival at Risdon Cove, and indeed it is only from its pages that the ordinary daily life of the settlement and the personal relationships of its officials may be in some measure reconstructed.

It was essentially a male environment, the wives of free settlers were few in number, and the small number of irregular unions of officials with the wives of convicts were resented and disliked by this very broadminded and tolerant clergyman. Apart from their daily duties, the little group of officers and officials made a very definite routine of meeting in rotation at their habitations, dining, and when spirit was available, wineing. The masters and officers of visiting ships were especially welcome, and visits were made and returned and some contact with the outer world maintained. Mountgarret and Knopwood had much in common. Both were robust and convivial types and typical of their service and period. His diary shows Mr. Knopwood as especially concerned with his dogs and fowling piece, and carefully noting the size and quality of the game he took; whereas Mr. Mountgarret's inclinations were towards his land (his acres were perhaps the first to grow wheat in Van Diemen's Land) and exploration with his boat.

The new settlement of Hobart Town at Sullivan's Cove gradually developed with the principal streets in their present alignment and certain public utilities as the wharves, store and general hospital sited and in use.

From an early plan of G. Prideaux Harris[12] the general disposition of the camp at Sullivan's Cove is well shown. At Hunter's Island, now the site of Jones and Company's business, were the wharves, storehouse and guard. On the rising ground bounded by the creek and the sea, where the Town Hall and Museum now stand, were sites occupied by the Lieutenant Governor, the chaplain and the surgeon.

The hospital is shown on part of the area still occupied by its successors, with a surgeon's quarters beside it. A building for the Royal Marines is approximately on the site of Saint David's Cathedral and shelters for the convicts are on the slope from Macquarie Street to the densely wooded creek, the Hobart Rivulet.

The centre of administration and of such social life as offered was, of course, that part of the little town where were first the marquees and later the more permanent habitations of the Lieutenant Governor and his officers.

Here visitors and officials from outlying posts would report and day by day Knopwood records their comings and goings, with often more than a hint of the business concerned: His relations with Mountgarret were friendly and cordial from their first meeting at Risdon. When a week later Mountgarret came to Sullivan's Cove, he not only dined with the chaplain, but as a compliment his name was that night selected by the Lieutenant Governor as the countersign for the guard. On the following Sunday, after the full church parade at which he preached his sermon on "The Prosperity of the Settlement", Knopwood went with a large party in the black cutter to Risdon, where, in his words, "I did my duty to the Convicts, etc., and later, I dined with Mr. Mountgarret and returned in the eve". It would have been interesting to have had the comments of his congregation, largely United Irishmen, on the service.

When Mountgarret visited the camp next day he was informed "that they had not had rain for four months". The same week the chaplain notes: "This morn went a-shooting early and killed a quail." Later he dined on the *Ocean*, where the same evening Mr. Moore and Mr. Mountgarret called upon Captain Merthow and in Knopwood's words "stayed late . . ." Next morning he was again after quail and killed four, "two of which I gave to Mr. Mountgarret and two to the Governor".

[1] The medical staff of Lieutenant-Colonel Collins were Mr. William l'Anson, surgeon, Mr. Matthew Bowden, first assistant surgeon, and Mr. William Hopley, second assistant surgeon.

[1] The Reverend Robert A. M. Knopwood (1761-1838) was domestic chaplain to Earl Spenser, 1801-1802, and chaplain to His Majesty's Ship *Resolution*. He was commissioned as chaplain to the expedition of Lieutenant-Colonel Collins, His Majesty's Ship *Calcutta*, on January 14, 1803, and served in Van Diemen's Land until his death on September 18, 1838.

The convivial dinner on the *Ocean* resulted in a plan to explore the river. Captain Merthow was one of the party, and very probably provided the boat used. On Monday, March 5, the diarist, Captain Merthow, and Mountgarret set off for Risdon Cove and dined there with the latter. With them were Mr. Humphry and Mr. Brown.[1] Dinner finished, the excursion was resumed and camp made for the night on the west side of the river about 17 miles from the starting point. Here Mr. Knopwood shot two black swans. Awakened at 5 a.m., the party went five miles further up the river, before breakfasting on the east side, where they shot some more swans. Resuming the journey, after another ten miles a halt was called "when we dined and pitched our boat sails for a tent". Possibly two boats were in use as "at 4 p.m. Mr. Mountgarret and Mr. Humphry left us for Risdon Creek".

Captain Delano of the United States schooner *Pilgrim*[13a] arrived during the week and dined on the *Ocean* on the Sunday with Knopwood, Mountgarret, Lieutenant Bowen and Lieutenant Moore. Delano was a type that only New England could have produced, a great sailor who had taken his own little ships into almost every newly discovered area, in two circumnavigations of the globe, following seals and trade. There must have been plenty of what Dr. Samuel Johnson termed "good talk" in the cabin of the *Ocean* that night; and again we have Knopwood's word for it that they "stayed late". On the following Friday Mr. Knopwood, out with his gun, killed three quail near Mr. Surgeon Bowden's marquee. Perhaps he hoped to get enough to help out the dinner for seven he had arranged for that night. The names of those invited are not given, but he mentions the party of four from Risdon, who did not get down in time. They made some amends, however, by taking wine with him when at 5 p.m. they did arrive. Shortly after Mr. Knopwood once again sprained his ankle, but next day he and Mountgarret were of a party of five that dined with Mr. Lord, and he adds, "after all they came to see me and stayed late".

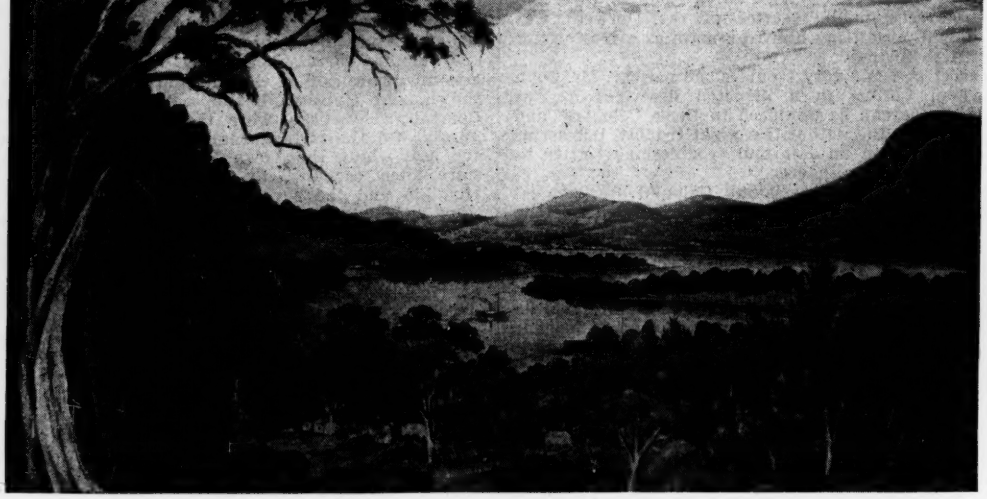

FIGURE I.
Risdon Cove, *circa* 1860. From a water colour in the writer's possession.

In the morning the two old friends, Captain Merthow and Mr. Knopwood, left the camp (which probably was about the first falls above New Norfolk) and "went a-shooting" about fifteen miles up the river, while Mr. Brown went "a-botanising". From the point reached, an extensive plain with few trees was seen, extending in their opinion for forty miles; no doubt our Macquarie Plains. He notes: "we see Kangaroos, Emews, Pigeons and Parrots, as well as many native huts and fires they had made". No natives were seen, but his comment runs "no doubt they see us". At 5 a.m. the next day came rain and hard squalls, so the canvas was struck, and a return made to the *Ocean* for dinner before landing at the camp. Knopwood concludes the day's entry "the first party that went on excursion up the river'.

Perhaps as a result of this meeting another expedition was arranged for he notes on March 27, 1804, "Mr. Mountgarret, Mr. Humphry and Mr. Brown and servants with ten days provisions, to go to the head of the river". They were not away so long for on Thursday, April 5, he notes: "at 2 p.m. the boat returned from the first fall of the river with Mr. Mountgarret, Mr. Brown the botanist and Mr. Humphry the mineralogist. "They went in search of the head of the river but could not find it."[13b] The search was to be much harder than anticipated and over thirty years passed before in February, 1835, Mr. George Frankland discovered Lake St. Clair and correctly reasoned that the fine river debouching from it must be the Derwent.

In the same week, at 8 a.m. one morning, Mr. Mountgarret and Mr. Brown called on the chaplain. Mr. Brown

[1] Robert Brown (1773-1858), a graduate in medicine of Edinburgh, was an army surgeon, until he was offered, by Sir Joseph Banks, the position of botanist to His Majesty's Ship *Investigator*, under Matthew Flinders. Designated by Humboldt *"botanicorum facile princeps"*, he must be regarded as the greatest British botanist. His only memorials in Tasmania are Brown's River and Mount Brown, near Hobart, which were named after him.

had left the quarters allotted to him on the *Ocean*, and now lived at Risdon, where he states[16] "by the politeness of Mr. Mountgarret and Mr. Moore, I can have a a small house, and live much more retired than it is possible to do with the larger colony", and all three went on to breakfast at Mr. Lord's. Later Mr. Knopwood walked back with his friends to the west side of the river opposite Risdon. On April 28 occurred the first anniversary of the departure of the expedition from England, and Mountgarret having come to the camp, Knopwood with Mr. Bowden and Harris returned with him to Risdon and dined there. He stayed over the week-end and had just returned to Sullivan's Cove when a very serious affray with the natives occurred, in which Mountgarret took a prominent part. It is best described in his note of May 3 to Mr. Knopwood:[17]

> Dear Sir, I beg to refer you to Mr. Moore for the particulars of an attack the natives made on the camp to-day; and I have every reason to think it was premeditated, as their number far exceeded any that we ever heard of. As you express a wish to be acquainted with some of the natives if you will dine with me tomorrow, you will oblige me by christening a fine native boy that I have. Unfortunately, poor boy, his father and mother were both killed; he is about two years old. I have likewise the body of a man that was killed. If Mr. Bowden wishes to see him dissected, I will be happy to see him with you tomorrow. I would have wrote to him but Mr. Moore waits. Your friend J. Mountgarret. The number of natives I think was not less than 5 or 6 hundred.

Later in the evening Mr. Moore himself came to Mr. Knopwood's marquee and stayed some time. The diary notes:[18] "He informed me of the natives being very numerous, and that they had wounded one of the settlers, Burke, and was going to burn his house down and illtreat his wife" *et cetera*.

Lieutenant Moore in an official report to the Lieutenant Governor writes:

> At this time a great party was in camp, and on a proposal from Mr. Mountgarret to fire one of the cannonades they dispersed. Mr. Mountgarret with some of the soldiers and prisoners followed them some distance up the valley, and had reason to suppose more were wounded, as one was seen to be taken away bleeding; during the time they were in camp a number of old men were perceived at the foot of the hill near the valley employed in preparing spears.

Being unable to obtain a boat, Mr. Knopwood and Bowden were unable to accept Mountgarret's invitation, but some days later, the chaplain made the journey and christened the native boy Robert Hobart May.[19] Mountgarret became interested in the child and brought him to the camp to show Lieutenant Colonel Collins. There is a tradition that he proposed, at a later date, to take the child with him to England; this the Lieutenant Governor refused to allow.

From this time we read less of Mr. Mountgarret in the diary. There is mention of a morning's shooting with him and "his dogs to kill kangaroo, when in a very short time a large one was accounted for". The surgeon, however, was afield, as on June 12, the diary records "at 12 Capt. Bowen in the whale boat and Mr. Brown with him, Mr. Mountgarret in his, went to Adventure Bay".

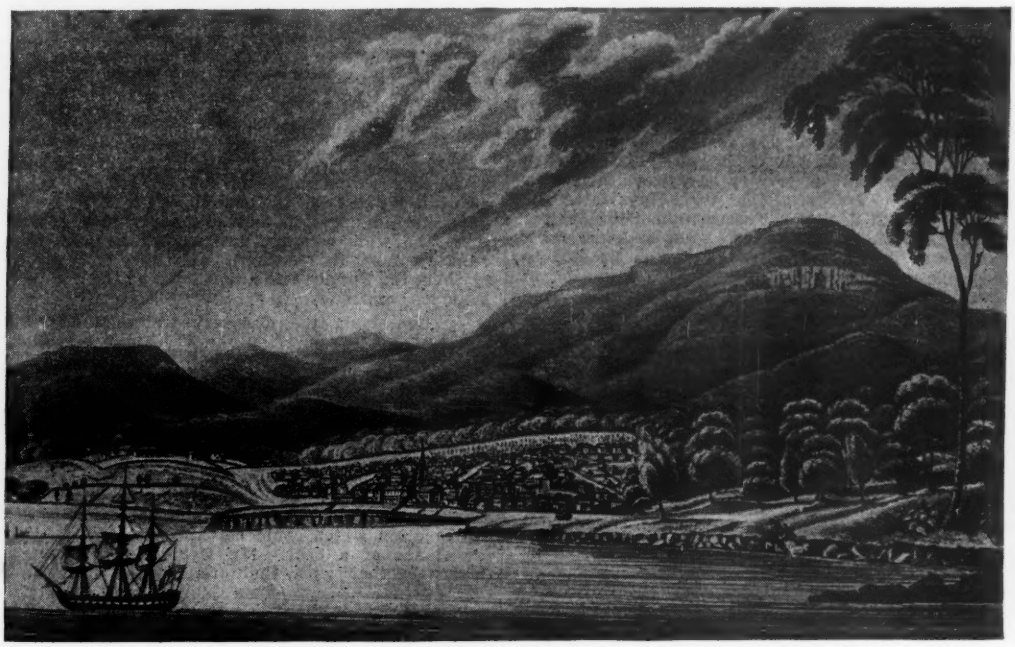

FIGURE II.

View of Hobart Town, Van Diemen's Land. Published in London, October 1, 1824, by J. Souter, 73, Saint Paul's Church Yard.

Eight days after they are noted as having returned to Risdon from their excursion. From this time Knopwood seems to have seen little of him and not to have stayed at his house on his visits to Risdon.

Meanwhile the *Ocean* had returned to the Derwent at the end of June, to remove the people from Risdon to Sydney. On Monday, August 6, almost all were on board and Mr. Knopwood dined on the ship with Mr. Mountgarret and others. Three days later the *Ocean* left for Port Jackson. With her went Mountgarret. His claims for the two houses and wheat grown at Risdon were met by the payment of £99 sterling for the former and £17 15s. for the wheat.[20] No mention is made of his stock.

He returned, however, with the new expedition to Port Dalrymple. Although he landed with the first party his appointment from Captain King as surgeon and magistrate was dated six weeks after the event (December 20, 1804) and the notification directed that having offered his

services as surgeon of the new establishment "you are hereby required and directed to proceed under the command of Colonel Paterson and follow all such orders and directions as he or any other your superior officer may give according to the rules and discipline of War".[21] For these services his remuneration was to be five shillings *per diem*.

The Settlement at Port Dalrymple.

By the end of 1804, a third settlement had been established at Van Diemen's Land.

On November 11 the first ship of the new venture arrived at Port Dalrymple with Colonel William Paterson of the New South Wales Corps and portion of its personnel. So senior an officer was not placed under the orders of Lieutenant Colonel Collins at the Derwent and until 1812 there were two separate establishments in the island, each responsible only to Sydney. With him on His Majesty's Ship *Buffalo* embarked Mr. Mountgarret. Captain A. F. Kemp, Ensigns Anderson and Piper with 64 other ranks of his regiment and 74 convicts, a total of 146. Additional personnel for the settlement on His Majesty's Brig *Lady Nelson* and the schooners *Francis* and *Integrity* increased the numbers to 181 of whom 20 were women.

Having out-sailed the other ships on a very stormy passage, the *Buffalo* made the entrance to the Tamar and came to anchor in Outer Cove, now George Town. During the night it blew hard and the anchor drawing, the ship took ground. It was only after very hard work, and with the assistance of the *Integrity*, that three days later she was refloated, without damage. To accomplish this, stores had been taken on shore, and as water was at hand and a limited area was fit for cultivation, Paterson decided to land his people pending a more detailed examination of the river.

The *Lady Nelson* was not available for this service until November 28, and on that day he joined the brig. With him were Ensign Piper and Mr. Mountgarret, who in a general order of November 19 had been appointed a magistrate of the settlement as well as Acting Superintendent of Public Works. A detailed description of the work accomplished in the following fortnight is given in his journal.[22]

The *Lady Nelson* had been especially built for surveying in unknown and shallow waters and was fitted with a sliding keel. Closely examining the nearby country as they went, on December 1 they reached the present site of Launceston. Here the brig could go no further and anchored.

Taking the ship's boat and the Lieutenant Governor's wherry, the stream (North Esk) was followed until fallen trees and insufficient water for the boats brought them to a halt. Here on rising ground their tent was pitched. From this spot spread out thousands of acres capable of being ploughed without the felling of a tree, a most promising country for settlers.

Two days later, Colonel Paterson divided his party into two groups so as to explore the country along both banks of the river to the south. Ensign Piper and Mr. Mountgarret with two soldiers moved independently. Here is the report of the latter,[23] written the same evening (December 4):

> About six miles above the tent discovered a very beautiful island about half a mile long and a quarter broad, covered with the richest pasturage, situated at the bottom of a most beautiful valley, extending five or six miles and about a mile and a half in breadth, the hills on each side of this extensive valley or plain are adapted either for pasturage or cultivation, being covered with a rich vegetable mold about a foot and a half deep. The Lotus is here in great abundance, and as it was in blossom gave the hill a very beautiful and rich appearance. I took the opportunity of naming them on the spot Paterson's Island and Vale, which I hope will meet with Colonel Paterson's approbation; I proceeded up the river about three miles further where the banks were very high which occassioned very great difficulty to approach the river, the interior still covered with excellent pasturage; on descending those hills, I was surprised to find the river almost trace back the same course we had come for about two miles, the banks low and excellent land; This reach is about two miles long and apparently a greater body of water than where we had left the boat . . . After having continued our walk for about six hours up the bank of the river at the rate of four miles an hour, we thought it advisable to return to the tent, which owing to the wanton windings of the river we were unable to perform in two hours, by steering a straight course for the Tent. . . . In fact there is nothing can exceed the meandering of this river, from the mouth of it up as far as it has been traversed.

Three days after, on the return voyage down the river, which Paterson named the Tamar, the same two officers were landed to examine a stretch of country bounding a reach of the stream. A small river and marsh noted were named by the Lieutenant Governor Piper's River and Mountgarret's Lagoon respectively.

The camp at George Town was reached on December 23, but five days later the party was out again. Paterson writes on January 8, 1805:[24]

> On the 28th, early in the morning, I crossed the harbour with the gentlemen named in the margin, to expedite the services we were engaged on, I formed two parties, one to attempt the exploring of the Rothsay Mountains, and to ascertain, if possible, what the country was to the Westward of them. As Messrs. Piper and Mountgarret had generally been on the most fatigueing duty, on this occasion I appointed them for this discovery . . .

The journal in which the results of this two-day reconnaissance was entered is no longer available and we may only guess that from the summit of the Rothsay Mountains Surgeon Mountgarret and his party saw spread below them the wide estuary, now known as Port Sorell, and running into its southern extremity a stream, called by them the Supply and now known as the Franklin River. Paterson continues:

> Conceiving the discovery which Messrs. Piper and Mountgarret made on the 28th, may hereafter become of material consequence to Government, I proposed that these gentlemen with Mr. Symons, should undertake a journey to the bank of the river, and to ascertain, if possible, for Your Excellency's information, whether it might be a safe entrance as far as they could judge by the eye.

So on December 30 they were fitted out for the task, and left the cove on New Year's Eve with three soldiers and three days' provisions. "On January 2 they returned, having accomplished their intention and gained every information which could be expected of them without the assistance of a boat. Mr. Symond's eye sketch of the river together with their remarks, I have annexed to my journal. . . ." This journal unfortunately is not available, nor is there any further mention of exploration by Mr. Mountgarret.[25]

To follow the routine of everyday life and play of personalities at Port Dalrymple, it is necessary to read between the lines of the dispatches to and from Sydney, as well as the journals and letterbooks of the Governors. There are no such personal narratives as Mr. Knopwood's diaries or the all too brief description of General Joseph Holt, which throw such light on the settlement at Sullivan's Cove.

As early as December 15, 1804, Colonel Paterson had taken his surgeon to Western Arm on the Tamar and together they had selected what the latter considered a healthy situation for "our intended Town". After five months at Outer Cove, George Town, the ill-advised movement of headquarters to Yorkton was made. The transfer to Launceston, the logical choice, took place in March, 1806. Colonel Macquarie, however, in 1811, resumed George Town as military headquarters of the Northern Settlement. In the following year, when Hobart Town became the capital of the united governments, the military returned to Launceston where detachments remained until 1846.

In this narrative Port Dalrymple is used to include George Town, Yorkton or Launceston or indeed any part of the northern settlement, until this amalgamation of 1812. Again the prefix Mr., Dr. or Surgeon is applied to Mountgarret as employed in the particular dispatch under consideration.

Apart from his official duties, Dr. Mountgarret seems to have been in these early days of the colony an energetic and resourceful settler. So much so that he was granted the unusual privilege of owning a boat, one rarely extended in a penal settlement. It was, indeed, necessary for his official duties. Paterson comments:[26]

> As Mr. Mountgarret is of great assistance to me in superintending this work and having frequent occasions for his services at Western Arm, I have allowed him to build a small boat, which he manages with his own men.

Eleven months later this flat-bottomed boat was used in transporting the government's Bengal cattle to a new pasturage across the river. The move was brought about by the drying up of the lagoon and depredations of the natives. Moreover, the locality did not suit the herd, in which a heavy mortality had occurred.

The surgeon does not appear at the moment *persona grata* to the Lieutenant Governor, who informed King:[27]

> I determined though reluctantly to engage Mr. Mountgarret's boat to transfer them by water, as stated and as everyone has his price, I have promised him one of the Bengal cows, when they are delivered safe at Brownriggs Plains.

The boat seems to have been a barge of 15 tons' displacement, 27 feet keel and 7 feet beam, which was surveyed by Lieutenant Oxley on March 1, 1806, and valued by him at £70. As the Lieutenant Governor deemed its acquisition to be indispensable to the public service at Port Dalrymple, it was taken over at that price in the following June.[28]

With the move to Yorkton, the initial stage of the founding of the colony of Port Dalrymple may be regarded as accomplished, and those settlers eligible applied for grants of land.

Mountgarret was now in his thirty-second year, and since his detachment from His Majesty's Ship *Glatton* to the colonial service had been associated with the three settlements at Van Diemen's Land in a medical capacity, and for a few months at the Derwent as a free settler.

On his small grant at Risdon he had been possibly the first to harvest wheat grown in the island. The long years of service afloat were behind him and with the status of magistrate and the goodwill of the Lieutenant Governor he might well look forward to becoming a prosperous landowner in the new colony. That his application for a grant did not err on the side of modesty may be seen by the Lieutenant Governor's comments to Captain King[27] on December 11, 1805.

> Mr. Mountgarret has certainly done more than them all, except Mr. Riley . . . [and] has three acres under wheat, which if no accident happens is at present a very promising crop. Again, you will see by the chart what a space Mr. Mountgarret looks forward to have. I have told him no part of it can be measured until I receive Your Excellency's instructions, as the space occupies nearly 3,000 acres of land.

A month earlier Colonel Paterson had taken the *Lady Nelson*, with a party of settlers and the acting surveyor, up river to measure their allotments. These, he writes, commenced where Mr. Mountgarret has begun, down on that side of the river, where "nothing is wanting but common industry, with very little labour in clearing".

It would seem that Mr. Mountgarret had made use of his boat to select and commence working his valuable property near Hobler's Bridge. On this excursion Paterson made it clear to the settlers that for their title to become effective they would have to remain in the colony and work their grants for five years.[29]

In March, 1806, headquarters were moved from Yorkton to Launceston, where conditions were ideal for the orderly development of the north of the island.

While in May, 1809, approval was received from Sydney for his location of 600 acres at the South Esk River, Mr. Mountgarret was noted as early as 1807 as settled there with 20 acres fallow, a garden, fourteen horned cattle and two horses.[30] His local title was probably associated with the sale of his boat or barge by which he was allowed as a special privilege to occupy 500 acres of land in addition to the 100 already granted him by the Lieutenant Governor.

In 1811 Colonel Macquarie confirmed the issue of this grant, which Paterson had issued from Sydney during the interregnum that followed the deposition of Governor Bligh.

The deposition of Governor Bligh at Sydney had its repercussions at Port Dalrymple, and Colonel Paterson, as senior ranking officer of New South Wales, left in December, 1808, to take over control at Sydney. After his departure a considerable decline in the fortunes of Mountgarret took place when, in 1809, following a fracas at the Heads, one Francis King brought a complaint against Mr. Mills, the harbour master, and his housekeeper. Sergeant Hughes, of the Rum Corps, was in open enmity to Mills, and his friend King having lost his case, was grossly insulting both to Captain Brabyn, the new Lieutenant Governor, and to Mr. Mountgarret, as will be seen in a report made by the latter:[31]

> I beg to inform you that, on my way to Government House to report to you, the prisoner King having been punished agreeable to the sentence of the Bench, I was accosted in the most insolent manner by Sergt. Hughes, who addressed me saying, You have done a pretty piece of business on the bench to-day in asking that Damned whore to sit down, meaning Mr. Mills housekeeper, one of the evidences against King; that, if I had done my duty, I would have shaved her head; he then asked me how I would like my conduct represented in the Sydney Gazette, which he intended doing and much language to that effect.
>
> Sergt. Hughes being immediately under your direction as a soldier, I therefore submit his conduct to your consideration, in confidence you will take the necessary steps to prevent the like in future.

This incident had an unfortunate sequel for the officers concerned. The New South Wales Corps was sacrosanct at Sydney, and while Sergeant Hughes was recalled, Secretary Finucane conveyed from the Governor a reprimand for Brabyn and an instruction that the retention of Mr. Mountgarret, as a magistrate, was no longer necessary. This to be conveyed to him as well as the fact that the servants allowed him in that capacity were to be returned to public labour, and two of them appropriated as part of the crew allowed for the harbour master's boat. So in a stroke he lost his official status, his salary in part and his free labour.

For a space of some five years there is no mention of Mountgarret in the records, and in all probability he was fully occupied with his farm and official medical duties.

The curtain is raised for a moment, however, on the occasion of an official visit by Colonel Macquarie to Van Diemen's Land in December, 1811. In the Governor's journal for December 6 is recorded how on his journey to Port Dalrymple, when camped on the left bank of the Elizabeth River, he found a number of gentlemen whose arrival had preceded his by one hour. This party, among whom was Dr. Mountgarret, had ridden south to welcome him, bringing refreshments from Major Gordon and ten fresh draught bullocks. Resuming their journey at 3 p.m., the cavalcade halted three hours later at the northern extremity of Macquarie Plains, where "the party from Port Dalrymple, having joined our own, dined with us on this ground".

Five days later the Governor-in-Chief, with Major Gordon, visited and inspected "the several farms on both banks of the North Esk River, as high up on the west side as Lt. Rose's Farm, and as far down on the east side as Dr. Mountgarret's Farm; the soil and the grazing of all of them good, with fine promising crops; but the habitations of the settlers are wretchedly mean and themselves dirty and badly clothed".[32]

This comment of Colonel Macquarie's on the want of material well-being of the settlers and its inclusion of Mountgarret's name are significant.

Further brief glimpses of Mr. Mountgarret and Mrs. Bridget Mountgarret are afforded just two years later, when Mr. Knopwood had to make a long overdue visit to the north of the island where a large number of christenings as well as other clerical matters required his attention. On the journey to Launceston on March 1 he stopped at the crossing of the South Esk and went by chaise to Mr. Mountgarret's farm and stayed a few

hours. During a stay in Launceston of over three weeks his diary records many more meetings. Over the first week-end he dined on two occasions with them and on the following Thursday a party of four rode with Mr. and Mrs. Mountgarret a distance of seventeen miles to their farm and stayed there for the night. The chaplain records: "We saw the sheep and cattle which were very fine and a delightful country". On three days of the next week, he continues: "We dined with them and on St. Patrick's Day, the guests included the Commandant, Captain Ritchie, Mr. and Mrs. Smith (Assistant Surgeon) and the Civil and Military Officers". Two days later Captain Ritchie and officers of the 73rd Regiment in their turn entertained the same party of "Officers and Gents". The tour came to an end on March 24, when Knopwood notes: "After breakfast I took my leave of Mrs. Mountgarret. Called on Captain Ritchie at Government House at Sydney. In the place of such senior and experienced officers, control had passed to others junior in rank and lacking in character and ability. As a result discipline slackened and administration suffered.

When Major Andrew Geils, who had administered the whole island from 1812, gave way to the new Lieutenant Governor, Colonel Thomas Davey, in the following year, there was no improvement. Incompetence and dishonesty were widespread, and so low had the Government fallen that Michael Howe on one occasion claimed to be Lieutenant Governor of the Woods, whilst conceding to Colonel Davey the Lieutenant Governorship of the Settlements. Bushranging was rife, and there were no courts of law in the colony competent to try any outlaws who might be taken. Terrorism reigned in outlying districts and trade and production languished. The few convicts sent from New South Wales were of the worst character and as a result

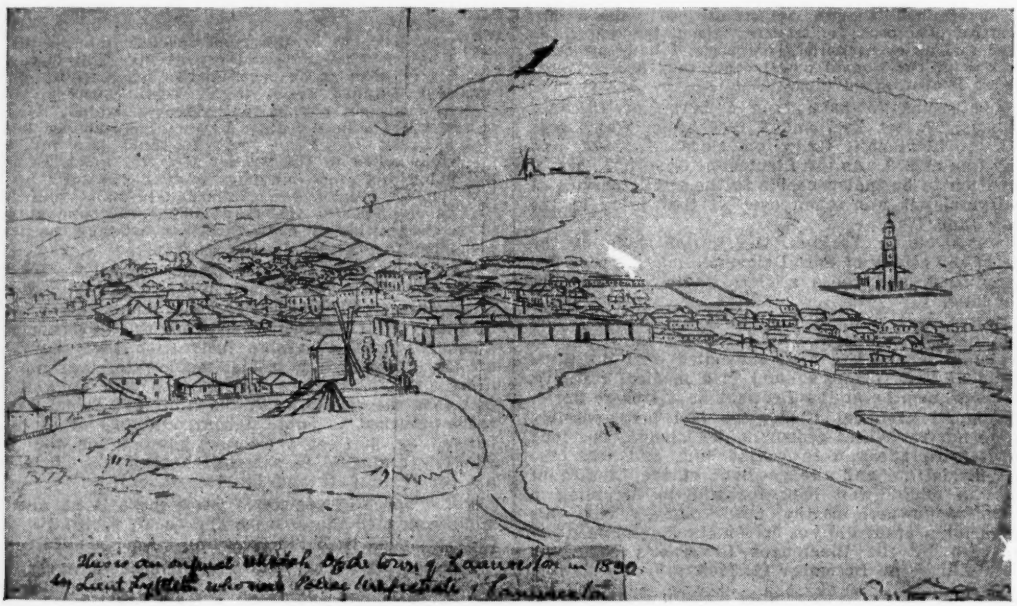

FIGURE III.

Launceston (*circa* 1830). From the original by Lieutenant Lyttleton in the Mitchell Library, Sydney.

[and] took leave", after which he rode to catch up the others of his party who had set out the day before for Hobart Town with a cart and six bullocks.[33]

It appears from the above that Dr. Mountgarret had at this time a residence in Launceston as well as a farm or farms and was happy and assured in his social and professional life. During this visit to the north, the old friends may well have discussed the alarming spread of bushranging throughout the island, but neither could have any suspicion that soon they were to be implicated in these activities—Mr. Knopwood by a challenge by Michael Howe as to his status as a magistrate, because of his possible association with one of his band, and Mountgarret to be involved with Mr. Peter Mills and his gang to such a degree that he had actually to stand his trial in Sydney for aiding and abetting them in their robberies about the Tamar.

Bushranging in Van Diemen's Land and Dr. Mountgarret's Association with Mr. Peter Mills and his Band.

In the early months of 1814, Van Diemen's Land was passing through a very critical period of its history. Conditions at both the Derwent and Port Dalrymple had been steadily deteriorating from the time of the sudden death of Collins in 1810 and the departure of Paterson two years earlier to assume the acting governorship little building was done nor were any roads constructed to open up the country.

Again, there was a widespread decline of morality among the officials at the settlements. For example, L. Fosbrook and P. G. Hogan of the Commissariat were arraigned on charges of misappropriation and fraud, while at Port Dalrymple Mr. Peter Mills, onetime surveyor and harbour master and since 1812 a free settler, and G. Williams of the Commissariat, finding themselves unable to meet their creditors, joined the bushrangers. Taken by the military, they escaped from the prison at Launceston, were recaptured and in due course sent to Sydney for trial. The depositions of witnesses so deeply involved Surgeon Mountgarret and Assistant Surgeon J. Smith that they in their turn had to answer charges of assisting the principals in their activities and escape from gaol. Mr. Mountgarret's share in the activities of Mr. Peter Mills and his associates is made clear in the depositions of a number of witnesses to the Magistrates, Mr. T. Archer and Major McKenzie, at Launceston on September 6, October 8 and December 19, 1814, as well as Mills's own statement to J. Ritchie, Esquire, commanding officer at the station.[34] Further details will be found in evidence given some years later to Mr. Commissioner Bigge.[35]

While the gang were rough and lawless, they did not endanger those they robbed. They were rather a band

of fugitives, hoping to make their escape to the islands of the Straits, and in no way comparable to the bloodthirsty ruffians operating in the midlands and south of the island.

Thomas Hinton, a servant of Mountgarret, in his evidence gave a very rambling account of the movements of the gang.[35] His description is very difficult to follow, but it seems that, with Mills, the party at first comprised six men and one black girl, who made their way, plundering as they went, towards the Heads. *En route* the flocks of those owners against whom they had any grudge were harassed and dispersed. Adding to their numbers as they travelled, they reached the Heads in due course and stole the boat of the harbour master.

Mills with nine in his party embarked, and after a robbery at Western Arm, took to sea, skirting the coast to the west. At the "second western river", probably the Mersey, the party divided. Seven, with the girl, made their escape to King Island, while Mills with Hinton and another returned overland to Port Dalrymple. Here they were taken by the military and lodged in the guardhouse at Launceston. A month later, after Mrs. Mills had produced some rum for the guard, an escape was effected, but Mills was soon recaptured under a heap of straw in the stable of Assistant Surgeon Smith. Sent to Sydney, Mills at his trial pleaded that he had been forced to join the bushrangers at the point of a musket, and had remained with them only under compulsion.

He and Williams were acquitted in due course; and Macquarie informed McKenzie that this finding was "the result of a total deficiency of evidence on which to convict them". McKenzie was also directed that for motives of humanity both were to be allowed to rejoin their families at Port Dalrymple.[36]

Long before this acquittal Mountgarret had been under suspicion and as early as May 14, 1814, had been removed from his position as a magistrate. In a dispatch of that date Colonel Macquarie had required Colonel Davey to inform him that "owing to his eternal disgrace and infamy, not only as a magistrate but as officer of the Government in conniving at the escape of Mills and Williams from the settlement . . . he is to be removed from his position as a magistrate as being totally unworthy of so important and respectable a situation".[37]

Mountgarret may well have remembered how, quite early in his career in Van Diemen's Land, the same action had been taken against him, without his being in the long run deprived of his status as a magistrate, yet it was clear that this time the situation was really serious, so he took himself to Sydney.

When the depositions of the witnesses against Mr. Mills arrived he was found to be so deeply involved that McKenzie was informed by Colonel Macquarie that Mr. Mountgarret was detained to be tried at Sydney on charges exhibited against him in the Mills affidavits.

He was also instructed to cause the several persons making the depositions to be embarked on the *Emu* for Sydney together with such witnesses as Mr. Mountgarret might wish to summon in his defence.[38]

Two of these witnesses, Thomas Hinton and William Ginner, were assigned servants to Mountgarret and Hinton's evidence was very damaging to his master. He alleged that whilst Mr. Mills was in the bush he was plentifully supplied with gunpowder, balls *et cetera* and dogs, the last-named having been obtained from Mr. Mountgarret. From him had also come the chief of the powder and ball, "having in general to the amount of 9 to 10 lbs. of gunpowder, 300 balls beside buckshot, flints and everything necessary for the bush".

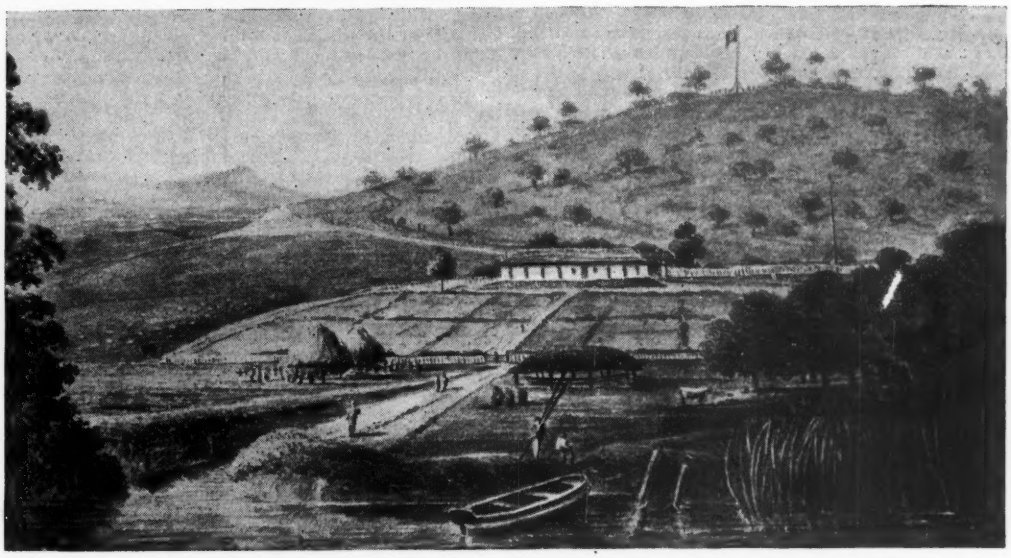

FIGURE IV.

Scene at Port Dalrymple, Van Diemen's Land. From the original by Lieutenant Lyttleton in the Mitchell Library, Sydney.

It was also deposed by Hinton that when he wished to give himself up to justice, Mountgarret sent word to him by Mr. Mills not to do so, as he, Mountgarret, could not settle the business for him.[39] Apart from all this substantial help, Mountgarret and Smith were stated in the depositions to have been actively concerned in the escape of Mr. Mills from the guardhouse at Launceston. Major McKenzie came to Sydney in the same vessel as Assistant Surgeon Smith, who was required to answer charges disclosed in the depositions as well as others relating to depredations on the Government's herds and flocks.[39]

There was considerable delay before the trials and McKenzie was gravely perturbed as to their outcome, as Dr. Mountgarret, in his belief, was "tampering with the prisoners and especially the evidences". With each delay, his chance of securing convictions became less; for it was alleged that Dr. Smith had offered Peter Mills £300 to contradict the evidence he had already given and Mr. Mountgarret money to another witness, Kettle, to withdraw his evidence. Major McKenzie expressed his feelings as follows: "The Colonial Doctor and his sneaking assis-

tant have been the authors of the various abominable perjuries, recently committed by almost all the evidences on the part of the Crown".[40]

As stated, when eventually the trials did come off Mills and Williams were acquitted. This happy result, in the case of Mills, was possibly due to the efforts made to suborn the witnesses, but more probably as Macquarie, with considerable restraint, pointed out to McKenzie, to the failure in the first instance of himself and Mr. Archer to take the depositions of the witnesses for the Crown in the presence of the accused. Indeed he feared that a similar irregularity made the conviction of the other defendants very uncertain.[30] This forecast proved to be correct. In the first week of February, 1816, both Mountgarret and Smith were acquitted, but details of the trial do not seem to have been preserved.

All four had indeed been fortunate. In the first place, owing to the failure of Major McKenzie to appreciate the important legal omission, so apparent to the magistrate, Mr. Wentworth, and in the second in the magnanimity of Colonel Macquarie, who permitted them, after their discharge, to return to their families and possessions at Port Dalrymple. It was left to Governor Arthur, only two decades later, to show the community which he administered that a well-known and respected midland landowner could be convicted and actually hanged for less than these men had been accused of doing.[41]

So Mills, Williams, Smith and Mountgarret found themselves back in Van Diemen's Land. The first-mentioned had the impertinence to apply to the Governor for a position as storekeeper and naval officer at George Town as well as an addition to his land. His application did not meet with success. McKenzie was, however, of the opinion that by returning to Port Dalrymple, Mills would "be a check on MtGarrett [*sic*], Smith, Field and other infamous and notorious characters and from being a tool, and also the complete Dupe of MtGarrett and others, he will see the necessity of immediately divulging any future deeds of infamy, and bring forward to their fate the Offenders, instead of concealing such pillage, which I am sorry to say on the late affair he too long culpably did".[42]

Assistant Surgeon John Smith promptly returned to Port Dalrymple and resumed his official duties and private vendetta with McKenzie. Mountgarret who had been some months in Sydney, stayed for almost two more years. Apart from his connexion with Peter Mills and his gang, another factor in his visit to Sydney was an action commenced by a landowner named J. Cummings. Cummings charged him with stealing his sheep, and as a surety in his proposed recourse to the law, deposited a bond of £100 with the authorities.[43] No action seems to have been taken to follow up this charge; possibly it was felt he already had enough to answer for. Again, compassion may have stayed Cummings's hand, for Mr. Mountgarret had suffered a grave breakdown in his health. In his own words to Earl Bathurst:[44]

> Memorialist came to Head Quarters at Sydney in New South Wales early in the year 1815, and there had the misfortune to be obliged to undergo the amputation of his arm in consequence of the exercise of his duty as a surgeon at Sydney.

Acquitted in the first week of February, 1816, he made an attempt to set his affairs in order and addressed a memorial to Governor Macquarie, with a second to be forwarded to Earl Bathurst. To Macquarie he emphasized his vindication by the Court in these terms:

> Important as such a Triumph must be to the common interest of society, it has yielded Memorialist more intrinsic satisfaction, from the reflection that the influence against him at Port Dalrymple had grown in his absence into a formidable combination: but it has afforded a recent lesson to the Colony at large, and more honourable to the Authority which presided over it, that in a Court of Justice constituted by such Authority, Truth and Integrity are sure to prevail, and the wicked views of prejudice and malice are as sure to be detected and defeated.

The memorial gives in detail his services in the Royal Navy and Van Diemen's Land and petitions that he may be allowed to retire on a pension or allowance equivalent to the services and sufferings he has enumerated, with the addition of such indulgence to a settler as all the circumstances of his case appear to deserve.[45]

No record exists of the Governor's reply and it is unlikely that he would view the memorial with favour. The appeal to Earl Bathurst did bear fruit, but over four years were to pass before a pension was granted.

Of his professional and other activities at Sydney we know nothing, but on December 6, 1817, he applied for a passage by ship to Port Dalrymple and on the 27th one was granted. As the proviso was added that it was to be paid for out of the Police Fund, it would appear that his affairs had gone from bad to worse during his stay in New South Wales.

The Last Decade at Launceston.

It was well that the young and eager colonial surgeon who landed with Paterson at Port Dalrymple could not foresee the hardships of his latter years at the settlement he helped to establish. The opening months of 1818 found him back in Launceston, with his health, in his own words, "shattered and incapacitated", in official disfavour and embarrassed in his affairs. On the other hand he was still in the Government service, apparently at the salary of five shillings with which he commenced in 1803, and he had his stock and farm or farms.

The records of such early years are incomplete, as are the surveys, and it is difficult to locate his holdings. His first 600 acres were close to St. Leonards on the North Esk, and this was probably the farm visited by Governor Macquarie in 1811. A second was at Cressy or the Lake River. At Launceston he lived at a barrack, evidently one of several separate buildings occupied by officers of the establishment. In September, 1819, he made formal application for its purchase. Approval was granted with the conditions that it should be surveyed and examined before a price was fixed and that the property should not be handed over until payment had been made. After the survey, Colonel Sorell, surprised at the figure arrived at (£70) as compared with the demand for £78 to build a kitchen onto the quarters of Mr. Archer (the more so as Mr. Mountgarret's was considered the best officer's barrack), hesitated to approve the transaction. However, in February, 1820, the barrack became the property of Mountgarret for that modest sum.[46]

Three colonial surgeons were now stationed at Port Dalrymple, Mr. Mountgarret, Assistant Surgeon John Smith and Assistant Surgeon Henry St. John Younge, and I doubt if any colonial Lieutenant Governor ever had a more insubordinate and untrustworthy medical staff to deal with. One had to take duty at George Town, whether by a weekly visit, as described by Mountgarret to Mr. Commissioner Bigge, or as a whole time duty is not stated. The exasperation of Colonel Sorell will then be appreciated, when it became his duty to inform Governor Macquarie that for over a month Dr. Mountgarret had absented himself from duty "and he conceived that officer's return to be distant and uncertain"; he (Colonel Sorell) had had to send Assistant Surgeon Younge to George Town and utilize the services of Mr. Assistant Surgeon Hamilton of the 48th Regiment to the colonial establishment at Launceston at the rate of five shillings per day. In his reply of September 29, 1818, Governor Macquarie had obviously had enough of his medical staff and his remarks will bear quoting:

> The extraordinary conduct and desertion from his duty of Surgeon Mountgarret would have induced me, under any other circumstances, to have suspended that officer also from duty, rank and pay; but with the present deficiency of medical officers in the Colony, I am reluctantly compelled to allow Mr. Mountgarret to continue to do duty and also to decline receiving Asst. Surgeon Smith's resignation for the present. I shall however, not fail to point out to the Secretary of State the expediency of removing Surgeon Mountgarret from his situation, and replacing him as soon as possible from Home.

A dispatch from Sorell meanwhile had informed Colonel Macquarie that after some four weeks' absence, Mountgarret had returned. He offered very contradictory and

inconsistent statements in explanation of the action he had taken and also applied for leave to proceed to Sydney. This Sorell had granted, but at the time of writing was uncertain as to whether Mountgarret had actually gone or not. Further information is given in a memorandum to Major Cimitere from Colonel Sorell in which the former is instructed that Dr. Mountgarret is not to leave Port Dalrymple without the proper clearances, but as it is understood from the Provost Marshal that Mr. Mountgarret is in his custody, "any leave of absence is in his present situation, nugatory". He also advises that Mr. Assistant Surgeon Younge, having acted in defiance of his instructions, has been suspended and his conduct reported to the Governor-in-Chief. It is evident that the district of Port Dalrymple was at this period very ill served by its medical establishment.[47]

Evidence before Mr. Commissioner Bigge.

The principal event during 1820, in Van Diemen's Land, must have been the arrival of Mr. John Thomas Bigge with his Commission of Inquiry on behalf of the Colonial Office. Mr. Mountgarret was a principal witness and on April 26, 1820, gave evidence in the form of answers to the questions of the Commissioner.

The first session dealt with matters relating to his administration and duties as a colonial surgeon; later evidence dealt with his land transactions.[48]

The former is of particular interest. From this it appears his only remuneration had been his government salary of five shillings a day and one horse; the provision of forage for the latter had been withdrawn seven months previously. For this sum he attended all persons employed by the Government, civil and military, though with no remuneration for the latter. Nor was he allowed anything additional for attendance on their wives and children. The average number of sick in hospital was stated to be twelve. Among them had been only a few suffering from fever, but dysentery had been prevalent, especially among newcomers as a result, in his opinion, of the immoderate use of spirituous liquors. Consumption he had found to be common, but usually in visitors (of whom many recovered) and not acquired in the island. Several officers of the East India Company's service, suffering from phthisis and dysentery, had come to Van Diemen's Land for their health. In his work he had also encountered many cases of confirmed *lues venerea* as well as old carious ulcers from wounds received by soldiers and sailors in service. In answer to further questions Dr. Mountgarret disclosed that there were no beds for women in his hospital. An occasional venereal patient was treated at the dispensary, but other females were found lodgings in town, payment for which was made by the issue of spirits or tea, sugar or slop clothing. At the hospital he had had no supply of medicines or clothing for the last two years in spite of frequent application. Persons, free or convict, were admitted to the hospital as occasion required, the convicts being required to bring with them sufficient provisions for fourteen days, so it is little wonder that he states the meat frequently became flyblown.

For treatment, medicinally, he relied principally on opium, different preparations of mercury, bark, salts, castor oil and purgatives such as rhubarb and jalap. His staff comprised a wardsman, a cook, an old man as an orderly and a barber who was almost disabled. It is little wonder that with no clerk, there were complaints from Sydney at the non-arrival of returns asked for.

An interesting answer was given to the question why so many articles, including gunpowder, had been ordered from the store towards the end of 1818. Mr. Mountgarret stated that his purpose was to use these as barter in purchasing such articles for the sick as rice and medicine which, he explained, were more easily procured by rum than by money. On one occasion, he obtained wine for his patients at £1 a gallon by selling the merchants rum at twice that amount. In regard to his records, he explained that a daybook had been kept from the date of his taking over, but about a year before, during his absence, this was stolen from his barrack. When questioned as to whether, as a consequence, he would find it difficult to render an accurate return of diseases and deaths, he replied that to do so immediately would be difficult but in a short time one could be rendered from his memory and from information of those who served under him at the hospital. The evidence tendered on the following day, April 27, was directed to his transactions in land and stock and will have to be considered separately. Mr. Bigge in his report[49] touches only lightly on the medical establishments at Van Diemen's Land. He remarks that at Launceston a wooden building of small dimensions was occupied as a hospital and that while it contained beds for seven patients, there was very little accommodation. Conditions at George Town were even more primitive; here a small hut had been converted into a hospital and was capable of containing five patients. It was ill constructed and had no floor, but was only intended for temporary use until a more suitable place could be provided. Mr. Bigge recommended that the remuneration of assistant surgeons should be increased from five to seven shillings a day with a ration and a servant for domestic use, victualled from the store. He stated also that in the year 1820, with the retirement of Mr. Mountgarret, of Launceston, its medical establishment was placed on a more efficient footing.

So it would appear that as a result of Macquarie's representations to the Home authorities or of Bigge's report, Mountgarret had been retired on the pension he had applied for some four years earlier. Henceforth he would not be concerned with the official duties he had undertaken for so long, and for his support on private practice and the working of his farm.

In spite of his numerous clashes with the Government, we know almost nothing of his private affairs. They are not mentioned in any dispatches, except in regard to his land and stock transactions, and even these are confused and hard to follow. It is recorded[50] that in 1809 he was granted 600 acres on the South Esk River and on November 30, 1816,[1] a farm at the Lake River, where he had an overseer or agent to carry out the improvements required by government regulations. Yet in his evidence before Mr. Bigge he stated that in 1818 he had no legal possession of any property, only a ticket of occupation to his land held from Lieutenant Governor Davey, and that in 1819 he acquired an area adjacent to this and sold it to Mr. C. Reid.[51] Again the diary of Mr. G. W. Evans, Deputy Surveyor General, in 1822, shows Mountgarret in possession of 600 acres on the North Esk, possibly at Cressy. Local tradition places his holdings as part of "Woolmers" near Longford, one of the most historic and beautiful homes in Tasmania. Mr. Thomas Archer, whose family have resided there since the early twenties of last century, tells me he believes that it was acquired by his grandparent before Mountgarret's death. I quote from a letter of his: "I do know he had a part of 'Woolmers'. The situation was overlooking a bend of the South Esk, and this part of the property is still known as 'The Doctor's Bend'. A small hut in the woodyard near the homestead was moved from the Doctor's Bend, and after being modernized, was reerected where it is now." Mr. Archer states that his uncle believed that this hut was once occupied by Mountgarret; this belief was shared by an employee named Keltie, who was born on the estate and died there some twenty years ago, being then aged "ninety and a bit". He continues: "I have at different times studied the ground carefully to see if I could locate the exact spot on which the hut stood. I found what I considered one or two likely ones, but could not locate anything really definite. The story goes, of course, that he attended members of my family here when he was in residence or shall I say retirement."

Whether in retirement or not, the old surgeon did have at least one more minor clash with the law in the action taken by a Mr. Wells to recover the proper value of certain

[1] Mr. C. L. Willes writes: "I notice in a list of grants shown in a diary of George William Evans, *D. Surveyor General, 1822*, a grant of 600 acres was made to Mr. Jacob Mountgarret, on the North Esk, River Tamar, this I think is the grant that *became his farm at Cressy.*"

of his cattle which Mr. Mountgarret improperly purchased from his agent.[52] In the Supreme Court at Hobart Town on this occasion, His Honour Mr. Barron Field "reprobated his conduct in the severest terms" and went so far as to speak of "this drunken fraud". He was only fifty-five years of age when his life came to an end at Launceston on January 27, 1828, and he was buried two days later in the Cypress Street Cemetery. His wife Bridget, who survived him for little more than a year, is buried beside him. Of his descendants, if any, we have no record.

Conclusion.

In bringing this long account to an end, it may be asked how it came about that Mr. Mountgarret, who commenced his career in Van Diemen's Land so well, found himself towards the end in such grave difficulties. His steady deterioration was due principally to isolation and the laxity of the senior officials at the settlement. For the firm authority of Lieutenant-Colonel Collins and a close relationship with the weak but upright Paterson were substituted the distant and corrupt administrations of Geils and Davey. Again, the assigned servants were dishonest and untrustworthy, with many opportunities for the theft of sheep or cattle, as government stock grazed in adjacent areas as the Sugar Loaf where there were no boundaries or stockyards. Fencing was very limited, with the branding and marking of stock rudimentary and careless. It can be imagined how easy it would be to find that one's herds had increased at the expense of others or that the reverse had happened. To rob the government herds would be a constant temptation and no doubt many beasts were taken. Mountgarret was known to be in financial difficulties as early as 1810,[53] yet his assets were surprisingly high. This is shown in a letter from him to his old friend Captain Piper, dated December 23, 1816,[54] in which he arranges for the disposal of his flock, in settlement of his debts, in the following manner:

> I drive in the whole of my flock of sheep consisting of 3,000 and let them run out big and little at £2 per head. His claim (Mr. Campbell) is £1,600, now I offer you to drive the remainder of my flock into the yard, and let them run out to the amount of your claim at 35/- per head.

Mountgarret goes on to explain that he paid much more than the price asked for certain of his flock, and asks Piper not to disclose the concession he is offering, as he has other claims to settle. He also asks for forgiveness for the short letter as he has been confined to his room for "these six weeks with Gout". Gaming too may well have paid a large part in his difficulties as in the same year he had to deliver a certain number or horned cattle to Mr. Rose and Major Stuart. This transaction, he informed Bigge, was in payment of a debt of honour to Lieutenant Lundin and Paymaster Birch of the Seventy-third Regiment. It was done through the Superintendent of Government Herds to whom he handed over beasts to the value of £862 18s. 1½d. Enough has been written to show that heavy drinking, so universal at the time and place, was another factor in his downfall.

In spite of all these vicissitudes, this rugged old surgeon must always be remembered as the first of his profession to settle in this island, and be honoured both for the work he did in exploration and developing the settlements at the Derwent and Port Dalrymple and for the courage with which, to the last, with his single arm he met the decline in his fortunes.

Acknowledgements.

To Miss P. Mander Jones, deputy Mitchell librarian, who made available extensive transcriptions from journals and letters as well as reproductions of original sketches from the Mitchell Library; to W. R. Le Fanu, Esquire, M.A., librarian of the Royal College of Surgeons of England, for exact information as to the medical credentials and postings in the Royal Navy of Mr. Mountgarret and other early colonial surgeons; to Thomas Archer, Esquire, of "Woolmers", for the well-considered appreciation of Mr. Mountgarret's association with the earliest occupation of what has been so long his family's estate; and to Mr. C. L. Willes, who drew deeply on his extensive knowledge of Tasmanian history to help in the location of the farms—to those named and to my constant friend Miss A. Wayne, M.B.E., I offer my sincere thanks.

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THE BENEFICIAL EFFECTS OF YEAST IN DIABETES MELLITUS.

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THIS paper is based on a number of cases of *diabetes mellitus* in which the need for insulin has been much reduced or entirely dispensed with by the use of yeast.

The first case in which this therapy was tried came under our observation on April 3, 1944, and has continued until this present period—that is, over two and a half years. In other cases there has been no attempt to alter the diet on which the patients have existed for a lengthy period. Baker's yeast in the form of a partially hydrolysed compound has been employed, easy assimilation being possible. The enzymes are still active, being unaltered during the process of manufacture. This yeast is not so bitter as brewer's yeast, and it is much easier to take large quantities up to one ounce of the compound ("Amino-B").

We had seen no reference to yeast therapy in diabetes when we began this form of treatment, and apparently very little knowledge of any effect of yeast on the disease had been acquired. We are indebted to O. H. Gaebler[1] *et alii* for some interesting facts. For a long time the knowledge that yeast metabolized glucose very actively formed the basis of a belief that it might contain some essential factors valuable to the diabetic. Gaebler states that "the beneficial effects from oral administration of yeast to diabetics were reported even before the present century, but they may simply have indicated that a patient with diabetes and vitamin deficiency shows some improvement if the latter condition alone is treated".

The active enzymes of yeast cannot be absorbed as they exist because of their polypeptide nature, and must naturally be broken down into their amino acids before absorption. The organic sulphur in yeast is mostly contained in glutathione, a substance in which yeast is comparatively very rich, and which, after being split into its three component parts—namely cystine, glycine and glutamic acid—can supply only a small amount of cystine to the pancreas for conversion into insulin, the latter containing a large amount of this important amino acid. However, much better sources of cystine are available in ordinary foods such as milk. The proteins of milk, casein and lactalbumin contain over 2% of methionine, which the body easily converts to cystine, and as the daily excretion of methionine is in the vicinity of 0·25 to 0·5 gramme, it is obvious that the amount of cystine in glutathione available to the body will be only a small amount in comparison with that of ordinary foods. It therefore follows that if yeast is beneficial, this effect is not due to the cystine content or to its enzymes.

Collip, quoted by Gaebler, in 1923 postulated the existence in plants of an insulin-like hormone, which he called glucokenin, and which lowered the blood sugar level of normal rabbits and of dogs from which the pancreas had been removed.

Nasset, Pierce and Murtin in 1931 demonstrated the favourable effect of yeast upon the storage of nitrogen in both normal and depancreatized dogs.

Dienst (1939), quoted by Gaebler, stated that the beneficial effect of yeast in diabetes had been known since 1898, and he reported noteworthy experiments on six diabetics. After the condition of his patients had been stabilized by means of diets of known carbohydrate, fat and protein contents for a period of several weeks, the diets were supplemented with a preparation containing thiamin, ascorbic acid and the entire vitamin *B* group. Carbohydrate tolerance improved in all cases, the daily insulin requirement fell as much as 20 units, and fluctuations of the blood sugar level were reduced. Dienst considered that his striking results were due to thiamin and ascorbic acid.

Martin (1927), quoted by Gaebler, found that in depancreatized dogs dramatic improvement followed simultaneous administration of all the vitamins of the *B* group, and moderate doses of insulin were effective.

Gaebler *et alii*, in their experiments on animals, observed the effect of withdrawing yeast from the diet of depancreatized dogs receiving a constant amount of food and insulin, and subsequently tried to produce the beneficial effects of yeast with known vitamins. They employed dried brewer's yeast. They attempted to replace yeast by thiamin, riboflavin and nicotinic acid; but the animals lost nitrogen and glycosuria reappeared. The addition of sodium pantothenate and ascorbic acid did not alter the response; but the addition of para-aminobenzoic acid, pyridoxin and inositol controlled the glycosuria. They then withdrew the various components of the vitamin *B* group and left only inositol as the dietary supplement; but glycosuria developed within twenty-three days. They state that "further experiments do not support the idea that inositol alone is the component of yeast which prevents glycosuria, but it appears to be one of the active constituents". Gaebler *et alii* also noted that the depancreatized dogs finally refused their food unless yeast was added, and on its addition restoration of appetite was rapid. In their final analysis, Gaebler *et alii* stated that the effects of yeast could be duplicated by the administration of seven of its known constituents—namely, thiamin, riboflavin, nicotinic acid, inositol, pyridoxin, pantothenic acid and para-aminobenzoic acid.

Martin, quoted by Gaebler *et alii*, noted in his experiments that choline was of no great anti-diabetic efficacy.

L. B. Owens *et alii*,[2] in studying the effects of thiamin, found that the administration of large amounts of aneurin and riboflavin to patients with well-controlled diabetes for many weeks did not reduce the insulin requirements or alter the severity of the disease. They believed that many of the claims of benefit from vitamin therapy were based on clinical tests before the disease had been brought under proper control by diet and insulin.

H. P. Himsworth, writing in "The Medical Annual" in 1943,[3] states that "reports have appeared from time to time that in *diabetes mellitus* thiamine reduced the high blood sugar levels and increased the sensitivity to insulin, but none have received adequate confirmation".

It has been shown that in the insulin treatment of schizophrenia, hetaxin (thiamin) prevents the onset of convulsions.

Pollack *et alii*[4] tested 139 patients with *diabetes mellitus* for decreased urinary excretion of vitamin *B* (thiamin), but there was no evidence of any deficiency.

K. A. Smith and H. L. Mason[5] in 1940 stated that no evidence had been found that the level of vitamin *B* influenced either the intensity of the *diabetes mellitus* or the sensitivity of patients with *diabetes mellitus* to the action of insulin.

The belief of Dienst that the beneficial effect in his cases was due to thiamin has not been substantiated, and it is strange how the emphasis of writers has been laid on this vitamin and not on the whole complex as contained in yeast.

In some experiments on patients between eight and nine years ago we used liver extract and glycine and noted some improvement, but the degree did not warrant further study. Glycine was employed because of extreme muscular weakness, and it seemed to be of value in combating this condition, which had been associated with diabetic neuritis.

CASE I.—In the first case in which yeast was employed, the patient suffered from pronounced muscular weakness and from tenderness of the peripheral nerves on pressure suggestive of diabetic neuritis. Vitamin B_1 was given and relieved both the weakness and pain; but it was not till yeast was added to the therapy that any great improvement took place. The suggestion to use amino *B*, a partially hydrolysed yeast, was made to us by Mr. Gibson Corbett, who was interested in and a friend of this particular patient. It was used in combination with vitamin B_1. The quantity employed initially was two drachms twice a day and later one ounce once a day on cereals in the morning. This compound was dehydrated, so that approximately one ounce was equal to four ounces of ordinary compressed yeast.

There was no doubt of the severity of the disease in this case, the patient's condition having previously been stabilized on a diet of 1,200 Calories and 30 units of protamine zinc insulin. Two and a half years have elapsed since he was first examined by us, so that sufficient time has elapsed for the value of the treatment to be estimated.

CASE II.—Another patient had had the disease for a period of six years. Her record is also one in which, as a result of yeast therapy, an increase of diet has been concomitant with a pronounced reduction in the insulin requirement. She had been attending a well-known diabetic clinic of a large public hospital, and her condition had been stabilized on a diet of 1,200 Calories with 32 units of protamine zinc insulin and 16 units of ordinary insulin per day. At consultation her fasting blood sugar level was 450 milligrammes per 100 millilitres and her urine contained a large amount of sugar, but no trace of acetone. Two months later her fasting blood sugar level was 340 milligrammes per 100 millilitres and her urine still contained the same amount of sugar; but her insulin requirement had been reduced to five units of ordinary insulin twice a day. Seven months later her fasting blood sugar level was 222 milligrammes per 100 millilitres, her urine contained the same amount of sugar, and she had increased her diet to 1,700 Calories, whilst of her own free will she had reduced the amount of insulin (now protamine zinc insulin) to seven units twice a week.

Because of some slight degree of diarrhœa, probably occasioned by the yeast, the amount of "Amino-B" was reduced by one-half. At the same time cystine (one and a half grammes per day) was added, to find out whether it would increase the degree of recovery; but at present we are uncertain of its usefulness. We think that it has not enhanced the effect of the yeast. On November 6, 1946, the patient's fasting blood sugar level was 180 milligrammes per 100 millilitres and the amount of sugar in her urine was reduced to one-fifth of the previous figure; the amount of insulin required was unchanged.

CASE III.—The third patient had had *diabetes mellitus* for ten years and her condition had been stabilized at a general hospital clinic with 24 units of insulin and a suitable diet. Her urine contained some sugar. She had been used to two doses of ordinary insulin per day, 16 units in the morning and eight at night. Her fasting blood sugar level was unfortunately not determined at this stage. The diet to which she had strictly adhered for years was not altered during the therapy. "Amino-B", two drachms twice a day, was prescribed. Three months later her fasting blood sugar level was 113 milligrammes per 100 millilitres, but there was no sugar in the urine; the patient informed us that it had gradually disappeared. Her diet and insulin dosage were unaltered. Approximately three months later she reduced her insulin intake to eight units in the morning and six at night, the urine being free of sugar during this period. Her fasting blood sugar level was 110 milligrammes per 100 millilitres.

Fourteen months after the commencement of treatment her diet remained unaltered and her urine contained no sugar; her insulin requirement was still eight units in the morning and six at night. Repeated attempts to reduce the amount of insulin had resulted in the appearance of sugar in the urine. The improvement in this case consisted in a reduction of insulin requirements by 40% and in the disappearance of sugar from the urine. Cystine (one and a half grammes per day) was added to the therapy during the last three months of the experiment; but there was no evidence of any benefit from the point of view of glucose tolerance.

Even though the amount of recovery was not so pronounced in this case as in the two former cases, a reduction of insulin requirement by the administration of yeast after the disease had been present for ten years marks a forward step in the treatment of *diabetes mellitus*.

The fourth case[1] reveals a dramatic response to yeast therapy, but as the history of the disease is probably only to be measured in months, the favourable outcome by itself may be somewhat discounted. However, as one of a number of successes it is indicative of the possibility of rapid improvement or even of complete recovery.

CASE IV.—The patient was a male. His average daily consumption of beer had been about six pints during the past few years, his florid countenance and protuberant abdomen bearing eloquent testimony to the constancy of his imbibition. On September 17, 1946, the day after consultation, his fasting blood sugar level was 333 milligrammes per 100 millilitres and he was given "Amino-B", 2 drachms three times a day, and a diet of 1,500 Calories; complete abstinence from all alcohol was ordered. His urine contained a considerable amount of sugar. On September 30 the fasting blood sugar level was 160 milligrammes per 100 millilitres and the urine was free of sugar. On November 4 the fasting blood sugar level was 103 milligrammes per 100 millilitres and the diet was increased to 1,700 Calories. On December 2 the fasting blood sugar level was 80 milligrammes per 100 millilitres and the urine was free of sugar. His systolic blood pressure had fallen from 180 to 160 millimetres of mercury and his diastolic blood pressure from 140 to 112 millimetres; he felt better than he had felt for years.

At no time did we consider insulin necessary. Apparently sensitivity to insulin was regained, and the pancreatic tissue had showed pronounced recuperative capacity in the presence of adequate yeast therapy.

CASE V.—The fifth case was mild. The patient, a female, aged fifty years, had a history of *diabetes mellitus* of only five years' duration; her fasting blood sugar level was 166 milligrammes per 100 millilitres and her urine contained some sugar. Three months later her fasting blood sugar level was 136 milligrammes per 100 millilitres and there was no sugar in the urine. Her diet was unaltered during the whole period of yeast therapy. Ten months later her fasting blood sugar was 115 milligrammes per 100 millilitres and no sugar was present in the urine. Seventeen months after the commencement of yeast therapy the patient felt well, her fasting blood sugar level was 129 milligrammes per 100 millilitres and no sugar had been excreted in her urine for twelve months.

These cases revealed the beneficial effect on the disease of "Amino B" (baker's yeast) in adequate dosage, whether from the point of view of insulin requirements, urinary sugar or fasting blood sugar level. However, one clinical fact is important, and that is that the patient's whole outlook changes and one and all bear testimony to the general improvement in health and bodily feeling. The diminution, often the complete disappearance, of lassitude, both physical and mental, generally occurs very early, and it was this observation that caused us to follow up this form of therapy over a relatively long period and to study its effect on patients who had had the disease for a long time.

Other patients are being treated who had not had insulin, dietary measures apparently being considered sufficient to control the disease. In some of these cases, but not in all, after the exhibition of an adequate amount of yeast, the same pronounced improvement in the fasting blood sugar level and in the urinary sugar content has occurred, with general clinical betterment.

Three patients have not responded to therapy, but as they are elderly diabetics who have had the disease for many years, the failure of response is easily understandable. We do not suggest that all patients will respond, but apparently in the acute cases the response may be almost unbelievable. Approximately half of our limited number of patients have responded. We are cognizant of the two main clinical types of diabetic—the young person with severe diabetes and the elderly person with mild diabetes. They have been described as follows:[6]

> The former typically loses weight, is sensitive to insulin and, unless given it, tends to become affected with ketosis and pass into coma; the latter tends to be obese and relatively insulin-insensitive and, although often the victim of the complications of diabetes, rarely passes ketone bodies.

In Case II the condition had been difficult to stabilize before the addition of "Amino B", but stabilization was easy after the exhibition of this substance. In one case, the notes of which are unavailable, the patient was a child; yeast therapy eradicated ketosis and enabled stabilization by insulin and diet to be accomplished. The production of diabetes in young puppies by pituitary extract suggests that the pituitary may be bound up in the ætiology of diabetes in the young.

If more extensive trials of yeast in the treatment of the young diabetic prove its ability to prevent ketosis and to stabilize control by insulin, yeast will be a valuable

[1] We are indebted to Dr. Paul White for permission to publish this case.

addition to our forms of therapy. Until the remedy has been widely used in cases in which ketosis is present, it would be idle to speculate whether yeast acts on the liver in its catabolism of fat or increases the effective utilization of ketones in the muscles of the body.

Our first patient was shown at a meeting in 1945, but at that time it was thought that large doses of thiamin (18 milligrammes per day) were necessary, as the yeast employed was baker's and not brewer's. We think that possibly a mixture of both may be more advantageous.

The partial hydrolysis of the yeast was carried out in order to make readily available the amino acids and polypeptides and to insure that all the vitamin *B* complex was available for utilization and absorption. "Amino-B" can be taken in large quantities, up to one ounce daily, either on cereals, porridge, *et cetera*, or dry and washed down with water or milk. Some patients have had slight diarrhœa with the larger dose (one ounce), which is equivalent to four ounces of compressed yeast.

The possible rôle of cystine is at present undefined.

We are aware of the fact that the pancreatic islets in 26% of diabetic subjects are normal, and that possibly there is some extraneous substance in the liver that controls their nutrition. As has been stated previously, *diabetes mellitus* resembling the human disease has been produced in animals by injection of the anterior pituitary extract, but that produced by alloxan, the ureide of mesoxalic acid—a compound of the uric acid molecule—is not entirely similar. H. R. Jacobs[7] produced diabetes in rabbits by the intravenous injection of alloxan, and his results have been corroborated.

How yeast acts is at present unknown, whether as an antagonist to the pituitary, or producing with or without the aid of the liver a substance or substances which control the nutrition of the β cells of the islets of Langerhans. The active principle in yeast is present apparently in brewer's yeast (Dienst's cases) and in baker's yeast (our series).

We had thought that possibly inositol was the key chemical, but although it seemed to be the most active and necessary substance as judged by Gaebler's experiments alluded to previously, it seems to be bound up with some of the other members of the vitamin *B* complex. However, we can be certain that thiamin is not an essential member of the anti-diabetic substance of yeast, but does prevent or cure the neuritis, a not infrequent complication of severe diabetes.

Conclusion.

The results in these successful cases indicate that there is readily available a relatively cheap and valuable remedy to influence beneficially the condition of many sufferers from *diabetes mellitus*.

The increased incidence of diabetes in the United States of America and probably in all the civilized world may be an indication of a deficiency in the vitamin *B* complex of our modern civilized diet, and the recent trend towards a better loaf containing more of this complex may be of national importance and may fall within the ambit of preventive medicine.

What we have not proved is what happens when the yeast therapy is suspended; whether true recovery takes place, or whether the product must be taken as long as life lasts, can be answered only by time, by careful follow-up of patients, and by repeated examinations. This is a work for a clinic interested in the disease, and should pay handsome dividends in the accomplishments of research.

To sum up: yeast (brewer's or baker's) in adequate quantities has the property in many cases of *diabetes mellitus* of increasing sensitivity to insulin, and thus improving carbohydrate tolerance, diminishing the amount of insulin requirement or even entirely eliminating the necessity for the use of insulin, and preventing ketosis, thus making possible stabilization of diet and insulin dosage.

Summary.

1. A short history of yeast therapy in *diabetes mellitus* is given. Any beneficial effect could not be due to the enzymes, or to glutathione or cystine. The work of Dienst as quoted by Gaebler *et alii* is referred to, especially with regard to his conclusion that thiamin and ascorbic acid were responsible for the benefit of yeast therapy in diabetes.

2. Gaebler and Dienst used brewer's yeast and we have used baker's yeast. Gaebler by his experiments on depancreatized dogs proved that the whole vitamin *B* complex was involved in ameliorating the disease, and noted the effect of the complex, not only on the insulin requirement, but on the appetite of the dogs. Inositol is a key substance but by itself will not control the diabetes.

3. It is fully established that thiamin by itself does not influence the disease, although it is of value in the actual neuritis associated with diabetes. It is also established that choline is not effective.

4. Histories of and comments on four patients treated by yeast are given, indicating considerable recovery in some of the β cells of the islets of Langerhans. One patient responded to treatment without insulin, whilst of the three receiving insulin, one experienced a 40% recovery, and another has been off insulin for about eighteen months, whilst the third is showing a pronounced decrease in the blood sugar level and diminution of insulin requirements.

5. The ability of both varieties of yeast to control diabetes in a fair number of cases is a big step forward in the therapy of the disease. The ability of yeast to control ketosis is mentioned.

6. The suggestion is made that the increase of diabetes in civilized communities may be due to the lack of the vitamin *B* complex in food, and the need of a better loaf for the people is stressed.

7. Finally, the quantity of yeast required can be easily taken in the partially hydrolysed compound "Amino-B". The quantity varies from two to eight drachms per day.

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ANÆSTHESIA FOR UPPER ABDOMINAL SURGERY.

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SINCE the advent of curare anæsthesia for upper abdominal surgery has been rendered safer, because when this drug is used much less anæsthetic agent adequately meets the surgeon's needs. However, the fact that patients belong to different groups, shortage of supplies and inexperience in its usage, make its use as a routine measure in every case unjustifiable.

In this particular type of surgery patients fall into three age groups. In the first is the infant, aged a few weeks, with pyloric stenosis. The second includes, with the exception of the young man who has a perforated viscus, patients aged from forty to sixty years who are to have operations upon the stomach, the duodenum, the gall-bladder and bile ducts, the spleen, and occasionally

the lower end of the œsophagus, which may involve both an abdominal and a thoracic approach. The third group is undoubtedly the one that has benefited most as a result of modern anæsthesia. In it are people from sixty years of age onwards, who are now given the opportunity to undergo long operations of which until recently they would have been deprived. The nature of the surgical interference itself and the length of time involved, in addition to the anæsthesia, usually put a severe strain upon the patient. This must be counteracted by careful pre-operative and post-operative treatment, in conjunction with careful administration of the anæsthetic. The final choice of anæsthesia must be made by both anæsthetist and surgeon.

Pre-Operative Treatment.

Pre-operative treatment of the dehydrated infant with pyloric stenosis who arrives in hospital for emergency treatment involves the intravenous administration of saline solution. As dehydration is present only a small quantity of atropine is necessary (atropine 1/200 of a grain is all that is indicated).

The adult with the perforated viscus, perhaps suffering from shock, dehydrated and short of protein, may need a drip transfusion of plasma and the immediate administration of morphine or one of its derivatives in combination with scopolamine as soon as the diagnosis is made.

The care of the patient awaiting operation should be carried out with particular emphasis on the cardiac, respiratory and blood conditions. The patient should not be confined to bed. The services of a physiotherapist will help in instituting breathing exercises, especially those which encourage free ventilation of the lung bases by intercostal and diaphragmatic movements. The giving of expectorants when sputum is present, and the stopping of tobacco smoking or its reduction to an absolute minimum are essential prior to operation. Blood transfusion to raise the hæmoglobin level as high as possible may be indicated, not only for the patient's general condition, but occasionally to counteract blood loss at the time of operation. If chest complications are expected after operation, the giving of one of the sulphonamide drugs by itself or in combination with penicillin is of use. On the night prior to operation a sedative should be given.

On the day of operation, "Nembutal" (three to four and a half grains) is administered about three hours prior to the induction of anæsthesia. If it is proposed to operate upon the stomach or duodenum, then a Ryle's tube lubricated with an analgesic ointment is passed via the nose about one hour later and the stomach is completely emptied, the Ryle's tube being left in place. One hour later, "Omnopon" (one-third grain) and scopolamine (1/150 grain) approximately are given. The amount of "Omnopon" depends upon the patient's reaction to "Nembutal", while for old people atropine (1/100 of a grain) is substituted for the scopolamine.

Anæsthesia.

For infants the anæsthetic agent consists of nitrous oxide and oxygen and a minimal amount of ether. The percentage of oxygen should never be less than 25, and particular emphasis is laid upon the small amount of ether that is necessary. At the end of the operation the child should be awake. No positive pressure is permitted; even the pressure of an expiratory valve wide open is considered too much. A satisfactory method is to remove the valve entirely, thus leaving part of the circuit open to the outside air; but if the removal of the valve is difficult, any equivalent improvisation is satisfactory. The alternative method for babies suffering from pyloric stenosis is local anæsthesia; a 1% to 2% solution of procaine is used, the addition of adrenaline being unnecessary. Subcutaneous injection along the line of the incision with injection of the rectus muscle and the preperitoneal layer is all that is indicated. There is little to choose between these two methods if the anæsthetist is experienced.

For adults the choice is one that includes curare in the form of curarine chloride (Burroughs Wellcome), "Tubarine" (Burroughs Wellcome), or "Intocostrin" (Squibb), and one or a combination of the less toxic anæsthetic drugs. The routine mixture used is "Pentothal" (0·3 to 0·4 gramme), cyclopropane and oxygen with carbon dioxide absorption, followed by curare given intravenously; curare is administered approximately at the time of the skin incision. In the case of very ill or very old people nitrous oxide is substituted for the cyclopropane with at least 25% of oxygen. The amount of curare can be standardized, according to Rowbotham, to 2·5 milligrammes per stone of body weight; but I have found that as the potency of the drug varies, it seems better to proceed with caution until the strength of the particular batch is known. It was found, for example, with the last batch of "Tubarine" (Burroughs Wellcome) that approximately 12 milligrammes gave satisfactory relaxation for about forty-five minutes in the case of the average healthy adult, supplementary doses being two to four milligrammes. The preparation "Intocostrin" (Squibb) has a different dosage. In this case the initial average dose is 60 milligrammes with supplementary doses of about 10 milligrammes. As curare when given in doses which produce muscular relaxation may cause mild temporary paralysis of the respiratory muscles, the technique of controlled respiration must be fully understood and brought into use. The effect of curare lasts for about forty-five minutes, and it is advisable to give as little as possible towards the end of the operation in order that the respiration shall not be inhibited when the patient is ready to leave the operating table. For this reason, when the peritoneum is closed (by which stage the effect of the curare is wearing off), 0·1 to 0·15 gramme of "Pentothal" is rapidly injected. This may temporarily cause cessation of all respiration, but will allow the surgeon to finish his suturing in complete comfort, controlled respiration being instituted in the meanwhile. Rapid administration of "Pentothal" is safe in competent hands. Recovery of respiratory rhythm may take two to three minutes.

If curare is not available, the next best type of anæsthetic agent is a combination of "Pentothal", cyclopropane and oxygen, followed by a subcostal intramuscular field block extending from the xiphoid process to the crest of the ilium several inches posterior to the anterior superior iliac spine. Subcutaneous injection is unnecessary, the object of the local anæsthesia being to obtain muscular relaxation only. The agent which I have used in these cases is a 1:2,000 solution of "Anethaine" ("Glaxo Laboratories") in combination with a 1:200,000 solution of adrenaline, a total of 250 millilitres being all that is necessary for this part of the procedure. The anæsthetist having completed this part, the surgeon, on opening the peritoneum, blocks the anterior splanchnic nerves, using about 100 millilitres of the same solution, the total amount of "Anethaine" being about 200 milligrammes. Anterior splanchnic block is preferred to posterior block, owing to the considerable fall in blood pressure associated with the latter. The alternative to an anterior splanchnic block is a mesenteric block; this is as effective, but takes a little longer time. For operations involving the region of the gall-bladder or bile ducts a left-sided subcostal block is used, while on the right side an intercostal block is induced by means of the injection of 10 millilitres of 1:1,000 "Anethaine" solution with adrenaline for each rib from the fifth to the twelfth. Bilateral intercostal block from the fifth to the twelfth thoracic vertebræ may be used as an alternative to subcostal block. In this case relaxation is more certain, but use of the lower intercostal muscles is lost for some time after the operation has been concluded. Tanner, in an article two years ago, quoted a successful series of partial gastrectomies in the aged under a combination of cyclopropane and oxygen anæsthesia and local anæsthesia. He now confirms that for these patients the best combination is cyclopropane, oxygen and curare.

Local anæsthesia by itself does not usually allow for complete intraperitoneal examination without some degree

of discomfort to the patient, and general anæsthesia may have to be induced at one stage or another. The technique is again a subcostal field block extending to the iliac crest, but including subcutaneous infiltration. Again, an intercostal block may be substituted for this procedure. The line of incision is also infiltrated and an anterior splanchnic block is performed. Far more gentleness in handling the abdominal viscera is needed. The solutions used are the same as previously indicated.

The technique of high spinal anæsthesia has improved much in the last ten years, but the incidence of respiratory complications remains about the same as for ether anæsthesia. Points against spinal anæsthesia include the inability to give oxygen in a satisfactory manner during the course of the operation and the "knocking out" of the intercostal muscles for some time after the operation has been concluded.

For operations on adults, no mention so far has been made of the use of any technique which includes ether. The reason for this is that with the anæsthetic drugs available today it is considered unnecessary. It is a toxic drug; post-operative nausea is increased and chest complications are more prevalent with its use than with other methods, perhaps with the exception of spinal anæsthesia as previously indicated. If cyclopropane is not available, the usual method of administration of ether is in combination with nitrous oxide and oxygen, just enough ether being used to give relaxation. It is unlikely that at the end of a long operation on the upper part of the abdomen a patient who has had ether will be in such good condition as one who has had cyclopropane.

Experience with controlled respiration is an essential part of the technique of using curare or cyclopropane or both. A mild overdose of curare is thus rendered a matter of little importance. As an adjunct to imperfect general anæsthesia, combined with local anæsthesia, curare is of great use. Here it may be mentioned that at any time during an operation, if curare is not being used, a rapid injection of a small amount of "Pentothal" (0·1 to 0·15 gramme) gives excellent relaxation in a few seconds, the anæsthetist in the meantime being ready to add more cyclopropane if necessary by controlled respiration, to produce a summation of effects. One occasional result of controlled respiration is the blowing up of the stomach; this effect is remedied if a gastric tube is in place. Sometimes operative interference in the neighbourhood of the diaphragm is apt to produce a spasm of the hiccup type. This can be overcome by increasing the depth of the anæsthesia with controlled respiration.

As in all types of anæsthesia, it is essential to keep the patient pink in colour from the start to finish of the operation. Even slight cyanosis will usually cause rigidity during the operation, while after operation it will delay recovery rate, and may be the cause of vomiting and instrumental in causing respiratory complications.

The passing of intratracheal tubes in all cases in which upper abdominal surgery is to be performed has been recommended by Hewer. The object of this procedure is to provide a certain airway and to overcome the effects of any laryngeal spasm. With curare spasm is rarely if ever present—in fact, curare has been used to overcome it. There seems to be little doubt also that a foreign body such as an intratracheal tube lying against the wall of the trachea and in intimate contact with the vocal cords and posterior pharyngeal wall causes some degree of local traumatic irritation, and it has been noted that the likelihood of respiratory complications after its use is increased, particularly in the case of men. However, a "cuffed" tube is indicated in cases of intestinal obstruction, in which regurgitation of stomach contents is always a possibility.

The patient's general condition may warrant the giving of saline solution, plasma, blood, or the "adrenaline drip" solution of Frankis Evans, which consists of adrenaline (one in 250,000) in normal saline solution. With the judicious combination of these four, the patient's general condition is surprisingly good after the most severe operation.

At the termination of the operation the upper airways should if necessary be cleared by aspiration, and before the withdrawal of the intratracheal tube (if this is present), a suction catheter may be passed into the trachea or the main bronchi. Carbon dioxide can be added in order to help eliminate the anæsthetic still present, to expand the bases of the lungs and to replace any cyclopropane present in the alveoli with atmospheric nitrogen and oxygen. Analeptics, such as five millilitres of nikethamide, can be given subcutaneously or into the bottle of an intravenous drip apparatus if one is operating, should any sign of the depressant respiratory effect of curare be still present. The blood pressure may be maintained by the continuous administration of the "adrenaline drip" solution.

Post-Operative Treatment.

When the type of inhalation anæsthesia indicated (with the exception of ether) is used, the patient will have a rapid return to consciousness, and at the earliest stage possible deep breathing and voluntary coughing must be encouraged in all cases. In view of the patient's abdominal pain this will be intensely disliked; but encouragement or even bullying will overcome reluctance. For restlessness and pain the early administration of morphine is essential, and for extreme restlessness there should be no hesitation in giving it intravenously in intermittent doses of one-twenty-fourth of a grain until the patient is quiet, a watch being kept upon the respiratory rate. This method overcomes the waiting period after intramuscular or subcutaneous injection.

Replacement of lost fluid should be a routine procedure. Coller and Maddock in 1940 showed that during an operation of average duration one to one and a half pints of fluid were lost. This may have been replaced by the intravenous administration of fluid during the operation, but if not, one pint of tap water may be given rectally, or if greater urgency is indicated by the patient's general condition the intravenous administration of saline solution should be commenced. Excessive blood loss should have been remedied at the time of operation.

Excessive or tenacious sputum should be dealt with promptly in order to avoid atelectasis or its usual sequel, pneumonia. The nurse supporting the patient's wound should induce him to make purposeful coughs. This may be more effectively carried out if preceded on the first few occasions by an injection of morphine. If this procedure is unsuccessful, a small intratracheal tube can be passed through the nose under local analgesia and a suction catheter applied. The patient, from the intense irritation of the tube alone, may cough out a large amount of tenacious material. If this is unsuccessful, bronchoscopy with suction under direct vision should be considered.

The administration of oxygen can be carried out either by an oxygen tent or by intranasal catheter. Both methods, though efficacious, are much disliked by the patients, especially the tent.

Summary.

Several methods of anæsthesia for upper abdominal surgery have been described and certain procedures discussed. A technique which includes the administration of curare with cyclopropane and oxygen anæsthesia is preferred. Mention is made of pre-operative and post-operative treatment.

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A PRECAUTIONARY MEASURE ADVISABLE IN CERTAIN ENDURANCE TESTS.

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A NUMBER of endurance tests have been suggested from time to time for use in the evaluation of physical fitness. In some of these tests the subject has to maintain a certain positive pressure within the thoracic cavity whilst holding his breath for as long as possible (Figure I). This sustained pressure, which is of the order of 40 millimetres of mercury, causes circulatory embarrassment which is evaluated to some extent in one such test[1] by counting the pulse rate.

In many subjects there is a tendency, once the pressure has been established, to relieve the thorax of the effort of maintaining the pressure by blocking communication between the mouth cavity and the lungs. The test then degenerates into mere breath-holding. The subject is "coasting" on the test, and in the borderline case may be classified too favourably.

The respiratory passages may be voluntarily closed at three places. Firstly, the palatine arches of the fauces may be narrowed whilst the soft palate is brought into contact with the posterior wall of the pharynx. This

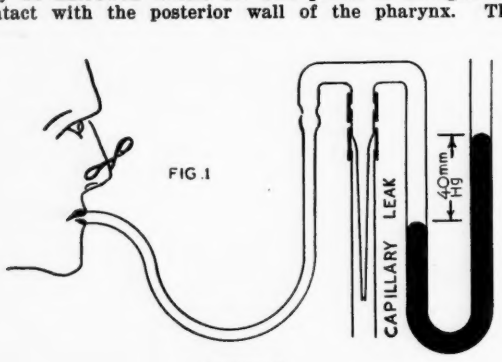

FIGURE I.

blocks communication between the nose and the mouth, whilst leaving the mouth in communication with the lungs. This action is brought into play when one inflates a balloon by mouth without holding the nose. Secondly, the tongue may be retracted to press against the soft palate, so closing the mouth cavity from the pharynx, whilst the nasal passages are still in communication with the lungs. This is the action which allows one to use a mouth blow-pipe continuously, maintaining an adequate pressure from the puffed cheeks, whilst breathing normally through the nose. Thirdly, communication with the lungs may be blocked by closure of the glottis.

To block communication between the manometer and the lungs, the subject may thus close off the mouth from the pharynx, or he may close the glottis. Closure of the glottis alone while the nose is closed by a clip or the fingers will not allow the subject to relax the thoracic pressure, for air would then be forced down the œsophagus. This may be demonstrated by passing a piece of small rubber tubing over the tongue and into the lower part of the pharynx, the other end of the tubing lying against the hard palate. If the manometer is now blown up and an effort is made both to close the glottis and to relax the thoracic pressure, air will be felt to pass from the mouth down into the stomach.

Closure of the mouth cavity from the lungs must thus be effected by closing the mouth off from the pharynx. This closure may be detected by palpation of the abdominal wall. To maintain the desired pressure when the manometer is in communication with the lungs the abdominal muscles must be tensed to support the diaphragm against the raised intrapulmonary pressure. If, on examination, these muscles are found not to be under any appreciable tension, one may be certain that the manometer is not in communication with the lungs. Moreover, if it is arranged that a volume of air can be withdrawn from the tube leading to the manometer, then when the manometer tube is shut off from the lungs either by the tongue, or by closing the mouth off from the pharynx, the removal of only five millilitres of air will lower the pressure in the manometer appreciably. On the other hand, the removal of 200 millilitres of air has no marked effect upon the manometric reading when the manometer is in communication with the lungs.

"Coasting" can be detected and prevented if an air leak of about 200 millilitres per minute at a pressure of 40 millimetres of mercury is established in the tube close to the manometer. Such a controlled leak may be easily prepared by drawing out a piece of glass tubing into a capillary tube. The capillary tube is then shortened by breaking successive portions from the tip until 200 millilitres of air escape per minute, when the pressure is 40 millimetres of mercury. This capillary tube is then protected by slipping it within a larger piece of glass tubing (Figure I).

With this tube in place, any closure of the lungs from communication with the manometer will be indicated immediately by a fall in the manometer reading. The subject who is watching the manometer must reestablish communication between the manometer and the lungs, and hence the thoracic cavity is continuously subjected to the full pressure.

The time during which the pressure is sustained is recorded in the test. The time recorded seldom exceeds 120 seconds, so that in this time less than 400 millilitres of air will be lost from the lungs. As the test is started after a maximal inspiration by the subject, a volume of about six litres of air is present within the lungs. The loss of 400 millilitres from this volume will not appreciably alter the time required for the carbon dioxide produced to accumulate to the breaking point. The times recorded in the tests when the leak is present will therefore not be appreciably different from the times recorded without the leak.

Summary.

The use of a controlled leak to prevent the subject "coasting", intentionally or otherwise, in the 40 millimetres of mercury endurance tests has been described.

Reference.

[1] "The Medical Examination for Fitness for Flying" (Royal Air Force and Civil), Air Publication 130.

Reports of Cases.

HÆMOLYTIC DISEASE OF THE NEWBORN.

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LEVINE[1] issued a warning, which should be remembered by all, against the unintentional iso-immunization of the Rh-negative female population by the giving of transfusions of Rh-positive blood to females of any age. On analysing a vast number of cases studied by him, he discovered that of 25 Rh-negative women whose first-born suffered from *erythroblastosis fœtalis*, 16 had a history of previous blood transfusion. There were 10 fœtal deaths in this group of 16 cases. This and other transfusion dangers have recently been stressed again by Henry and Simmons[2] in this journal.

As Rh testing facilities are now widely spread throughout Australian laboratories, owing to the close cooperation between the Australian Red Cross Blood Transfusion Services, the Commonwealth Serum Laboratories and

workers in some 70 laboratories, such possible cases as those mentioned above, and transfusion reactions due to the Rh factor, should now become a rarity.

The following report of a case, while not one of hæmolytic disease in the first-born, is of interest, because the mother's serum was found to contain "blocking" antibodies of two different Rh specificities, and one of these must have been due to an antigen present in blood of group O, which was transfused without regard to the Rh factor. The details given here further illustrate the information which can be given to the medical practitioner and the patient when a laboratory investigation is carried out. The knowledge gained in this case will save both parents a great deal of future mental anguish, as this mother in particular should not be subjected to further unsuccessful pregnancies.

Clinical Record.

In January, 1944, Mrs. X. gave birth to a healthy, full-term female child. In August, 1944, a cholecystectomy was performed, and the patient received about 400 millilitres of group O blood for post-operative hæmorrhage. No reaction was detected. In March, 1946, the patient gave birth to a dead baby at full term, and this baby was regarded as suffering from *erythroblastosis fœtalis*, although no autopsy was performed.

Three months later, the Commonwealth Serum Laboratories agreed to carry out investigations on this case. The mother proved to be of blood group O, Rh-negative (type rhrh), while the father was shown to be of blood group A, Rh-positive (type Rh_2). The mother's serum contained only a trace of anti-Rh° agglutinating antibodies when tested with selected cells suspended in saline solution—a finding which would not explain the fœtal death. Other tests then performed with selected cells of known Rh types suspended in a solution of 25% human albumin, and with the patient's serum serially diluted with a normal serum of group AB, revealed that the serum contained in addition anti-Rh° "blocking" antibodies to a titre of 1/2,560 (complete agglutination to 1/320), and anti-Rh′ "blocking" antibodies to a titre of 1/20. As anti-Rh′ agglutinins could not have been stimulated by any antigen in the father's cells and inherited by the fœtus, then this antibody must have been stimulated by an antigen present in the indiscriminate group O blood transfusion given about nineteen months previously.

Discussion.

The presence and the extremely high titre of anti-Rh° "blocking" antibodies was thus responsible for the death of the infant *in utero*, and their presence would also confirm the earlier presumptive diagnosis of *erythroblastosis fœtalis*.

The next question to be answered was whether the father was homozygous or heterozygous in respect of the Rh factor—that is, were his blood cells of subtype Rh_2Rh_2 (all future children Rh-positive, Rh_2rh), or were his cells of subtype Rh_2rh (thus some children Rh positive, Rh_2rh, and others Rh-negative, rhrh, owing to the combination of the rh genes from each parent at fertilization). This statement will be followed easily if it is remembered that the gametes, spermatozoa and ova individually carry one gene only of the two possible from each parent, and they may unite in different possible combinations to form the complete or first cell of the new organism. This procedure is mentioned again, as so few have any idea of the mechanism of gene inheritance, and in the study of Rh problems it is most important. (One may perhaps remind readers that for the appreciation of the nature of heredity we are in debt to Father Gregor Mendel, 1822 to 1884, who, while working at the Augustinian monastery of Saint Thomas in Moravia, published the results of his researches in 1866; these received due attention only in 1900.[3])

The determination whether Rh_2 cells are homozygous or heterozygous presents a special problem, in that, while the agglutination test is a simple as any other, it requires the fifth serum of the Rh-Hr series as discovered by Mourant.[4] This anti-e serum (English terminology), or anti-Hr″ serum (American terminology) is extremely rare, and to date has been reported only in England. Fortunately, in this instance, a small sample had generously been sent by the English workers to Dr. G. A. Kelsall, of Perth, who kindly tested the Rh_2 cells and found them to be of subtype Rh_2Rh_2; that is, they failed to agglutinate with the anti-e serum.

It was thus possible in this case of hæmolytic disease to determine the specificities of the Rh antibodies present in the patient's serum, to advise the medical practitioner that Rh incompatibility was responsible for the condition, to determine the probable Rh genotype of the father's cells, and on sound evidence, to advise these parents not to attempt to have any further family, as the possibility of obtaining a viable child would be extremely remote.

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Reviews.

LEPROSY.

The third edition of "Leprosy", by Sir Leonard Rogers and Ernest Muir, is to hand.[1] The first edition appeared twenty-two years ago, the second seven years ago. One of the few pleasant effects of war is that to it we are indebted for the early appearance of this third edition. It appears that a large part of the second edition and many of the illustration blocks were destroyed. The new illustrations are increased in number and the book has not suffered but rather increased in value from enemy action. One further advantage is that recent work has been embodied in the sections of ætiology, clinical manifestations, treatment and prophylaxis. During the war, in tropical disease, maximum effort was devoted to malaria, not only to its control, but also to the elaboration of new drugs and improvements in treatment. As a consequence less attention was paid to leprosy.

This work deals in detail with the Mitsuda (lepromin) test and also comments on recently developed remedies such as "Promin", but no exaggerated claims are made for these new drugs; indeed, the authors emphasize the paramount importance of general measures for increasing the general resistance of the body against the invading organism. As before, Sir Leonard Rogers is responsible for the work on history, distribution, epidemiology and prophylaxis, while the ætiology, clinical description and treatment are in the capable hands of Ernest Muir. The disadvantages of compulsory and punitive segregation are again emphasized and the chapter on recommended administrative procedure is clear and logical.

The work is so clearly written that it will meet the needs of tropical practitioners and students alike.

SQUINT AND CONVERGENCE.

"Squint and Convergence", by N. A. Stutterheim, which is called a study in di-ophthalmology, introduces the main concept of our orthodox ideas on squint and convergence in a new way.[2]

The author's ideas on the ætiology of squint are new and may account for a certain number of cases. Although he criticizes orthoptic training, he advises very similar instruments to those used by orthoptists. He does not mention squints complicated by vertical imbalances such as alternating hyperphorias or overacting obliques associated

[1] "Leprosy", by Sir Leonard Rogers, K.C.S.I., C.I.E., M.D., F.R.C.P., F.R.C.S., F.R.S., I.M.S. (retired), and Ernest Muir, C.I.E., M.D., F.R.C.S. (Edinburgh); Third Edition; 1946. Bristol: John Wright and Sons Limited. London: Simpkin Marshall (1941) Limited. 8½″ × 5½″, pp. 292, with many illustrations. Price: 25s.

[2] "Squint and Convergence: A Study in Di-Ophthalmology", by N. A. Stutterheim, M.D. (Rand); 1946. London: H. K. Lewis and Company Limited. 9½″ × 7½″, pp. 104, with illustrations. Price: 15s.

with lateral squint. A glossary at the end would be very helpful, as the terms he uses and the names "coined" could puzzle the average specialist.

This is a book that would be interesting to specialists who are interested in this type of work, but we doubt if many would have the time and patience to follow out all that the author suggests in regard to the treatment of squint, especially in view of the results obtained with orthoptic treatment.

HYPOMETABOLISM.

IN their brochure, "Hypo-Metabolism", published in 1946 in Copenhagen, the authors, Esben Kirk and Sven Ancher Kvorning, apply statistical methods to clinical findings and basal metabolic data, taking as their criterion of hypometabolism a basal metabolism of 88% or less of the normal. The causes of hypometabolism are classified as genuine myxœdema (including the results of treatment of hyperthyreoidism), reduced activity which can arise from a number of conditions, reduced intake of nourishment, hypogonadism, psychoses, scleroderma, amputations of extremities, while the last group is called simply "uncertain cases". The clinical material was obtained from a district in northwestern Jutland, containing a population of a little over 70,000. The exposition is mainly statistical and the punch-card system has been brought into operation. The booklet gives the impression of careful work both experimental and observational. One very serious drawback is that the number of cases does not really warrant the elaborate statistical machinery employed. The authors rather naïvely state: "This study is based on observations made on a large number of patients." And again: "It should be noted that in treating so large a numerical material . . ." The reader will be a little startled to find that the grand total of cases of hypometabolism amounts to 308. A convinced vegetarian may get a shock to see that a diet restricted to vegetable foods is listed as a cause of low basal metabolism, but he will be relieved to find that there were only two victims. Another unfortunate feature is that each clinical condition, and there are some twenty-five of these beginning with chilliness, decreased sweating, fatigue, impairment of memory, is pricked down as present or absent, whilst a blank indicates uncertainty. Even in the somewhat clumsy presentation of Wassermann results there is some attempt at grading the intensity of the reaction, but here there is none. This latter blemish is the outcome of the application of statistical tricks designed for ungraded qualities or a clean-cut yes-or-no classification to signs and symptoms which do not lend themselves to this treatment. For the two reasons stated, the value of this brochure is small.

CRIMINAL CASE HISTORIES.

IN the past the individual criminal has received less psychiatric attention than either the neurotic or the psychotic. Even at the descriptive level this has been so; but with the publication of "Case Studies in the Psychopathology of Crime" Ben Karpman is helping to remedy the defect by supplying a reference source for research in criminal material.[3] This is the second volume of a series and deals mainly with persons involved in sex crimes. The first volume, containing five cases, and published in 1933, presented the case histories of men charged with predatory crimes. It is intended that the third volume will be confined to murder cases.

The four cases presented in the present volume are essentially "human documents". After a plain statement from the criminal's official record the story unfolds itself in the first person, and the autobiography of the social outcast makes its appearance with only such corrections of grammar, syntax, spelling and punctuation as are deemed desirable by the compiler. These corrections have been cleverly executed, because the stories make easy and interesting reading. A number of the patients' dreams are presented. One case (of rape) is given in the original form as it was analysed, session by session; and this is followed by autobiographical details volunteered by the patient and a general summary also in the patient's own words.

Dr. Karpman offers no comment on all this material. He intends to follow the procedure adopted in his earlier work and confine all his interpretative and diagnostic material to a separate book, "The Individual Criminal". A book by this name appeared in 1935, two years after the publication of the first volume of case studies. It is the author's intention to publish a second and similar volume in which the present four cases will be adequately discussed.

The presentation of criminal case histories in such completeness as has been achieved in the volume under review is of inestimable value to the psychiatrist and the psychologist. Each case becomes a completed specimen in the ever-growing museum of psychopathology, as important as those physical specimens in glass jars are to the pathologist.

BACTERIOLOGICAL CHEMISTRY.

THE great development of microbiology in the last nine years will provide a ready welcome for the second edition of "An Introduction to Bacteriological Chemistry", by C. G. Anderson.[1] The original book has been expanded to 500 pages, mainly by the introduction of extensive chapters on growth factors, chemotherapy and antibiotics. Several chapters have been revised to include changes in this flourishing branch of biochemistry. The author has also accepted criticisms of the first edition and included a few more references to the sources of his information.

Our experience leads us to agree with critics of the first edition, who will approve the changes made in the list of references. We suggest that in the third edition this matter could be more carefully considered and would increase the usefulness of the book.

Apparently this book was written as a guide to a particular course in bacteriology in Edinburgh, and we are not conversant with the prerequisite standard of biochemistry and physical chemistry attained by Edinburgh students. However, the first fifty-five pages devoted to physical chemistry and enzymes could have been used more profitably in the main part of the book and these two subjects studied in the more conventional sources.

The main purpose of the book is achieved very well indeed. Naturally, those chapters covering aspects to which Dr. Anderson has made contributions, even though he does not mention that fact, are very good. The three new chapters are excellent condensations of rapidly expanding subjects, and along with the two chapters on immunochemistry constitute the best part of the book. Some readers will, no doubt, regret that some chapters were not given a greater share of the space available, but all will agree that Dr. Anderson has included a surprisingly large collection of useful, well-arranged information into a small volume.

All microbiologists should read this book. It is an invaluable introduction to the most promising aspects of their subject at the present time. Pathologists, biochemists and physicians will find in it an excellent account of the principles underlying a number of questions which they take for granted.

SANITARY SCIENCE.

"SANITARY SCIENCE NOTES", by H. Hill and E. Dodsworth, provides a handy synopsis of the subject for students and also for public health officers.[2] As stated in the preface, the book is not intended to take the place of a textbook, and no one would expect a book of 135 small pages to do this. However, all the phases of sanitary science from building construction to pest destruction are concisely dealt with and many summaries in tabular form are given, which all students will find useful for examination purposes. Most space in the book is given to the subject of refuse and sewage disposal, and this important subject is adequately covered. It should be remembered that the book is published in England, and that owing to climatic differences some basic details especially in building construction in this country differ from those described. As the subject matter is all very simply and clearly expressed, this book will be an aid to health and building inspectors as well as to medical men, and in fact would give men in these occupations all the details they would need on the subject.

[1] "Hypo-Metabolism", by Esben Kirk and Sven Ancher Kvorning; 1946. Copenhagen: Einar Munksgaard. 9½" × 6", pp. 83. Price: Danish Croner 7.25.

[3] "Case Studies in the Psychopathology of Crime: A Reference Source for Research in Criminal Material", by Ben Karpman, M.D.; Volume II, Cases 6-9; 1944. Washington: Medical Science Press Station L. 11" × 8½", pp. 746. Price: $16.00.

[1] "An Introduction to Bacteriological Chemistry", by C. G. Anderson, Ph.D. (Birmingham), Dip.Bact. (London); Second Edition; 1946. Edinburgh: E. and S. Livingstone Limited. 7½" × 4¾", pp. 510. Price: 20s.

[2] "Sanitary Science Notes: A Handbook for Students", by H. Hill, F.R.San.I., F.S.I.A., A.M.I.S.E., and E. Dodsworth, M.R.San.I., M.S.I.A., 1946. London: H. K. Lewis and Company Limited. 6¾" × 4¼", pp. 143. Price: 7s. 6d.

The Medical Journal of Australia

SATURDAY, MARCH 22, 1947.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

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THE TRAGEDY OF THE MENTAL HOSPITALS.

For some years it has been customary to review in these pages the activities of one or more of the State mental hospital departments. These reviews have been prompted by the publication of departmental reports. The reports nearly always appear some twelve months or more after the close of the year with which they deal. One would expect that in these circumstances the reviews would lose much of their point—that in the latent period some heed would be paid to the clear statements of departmental heads, and that some attempt would be made to make good deficiencies. But anyone who cares to go back over the years will find that the story has always been one of steady increase in overcrowding and of repeated failure to make any worthwhile improvement in hospital accommodation. We have never been tired of pointing out that patients in mental hospitals are not like other persons in the community who can compel attention by the loudness of their protests and achieve some kind of result by political pressure, if in no other way. The needs of persons who are "mental" and whose votes have not to be wooed are easily pushed on one side in favour of others who can devise means to make their claims appear more urgent. That it is the duty of the community to help those who cannot help themselves, is beyond dispute in a country which prides itself on its democratic way of life.

There is no need to remind readers of this journal of the manpower difficulties which arose during the war and which are still being experienced in almost every communal activity. In public and private hospital practice the difficulties became and still are most acute; most medical practitioners could become quite eloquent on the subject. As has been shown in previous discussions in these columns, the reasons for staff shortages in hospitals are not all connected with the war, and this, of course, makes the problem much more complicated. Apart from these considerations, mental hospitals have their own peculiar difficulties to add to the list. The present position of mental hospitals, and it may well be described as tragic, is the result of general causes, of manpower shortages that arose during the war and have shown no sign of being made good, and of a governmental policy of not doing today what could be put off till tomorrow, carried out for many years. The shocking state of mental hospitals, which should be widely known, at least among those capable of constructive thought in such matters, is set out in plain words by Dr. J. Catarinich, Director of Mental Hygiene of the State of Victoria, in his report for the year ended December 31, 1945. He writes that during the year practically all new building ceased. Newly completed wards remained unoccupied on the one hand because female staff could not be recruited, and on the other, because on account of "the grave necessity for increased housing accommodation in the community" some of the new blocks were taken over for the temporary accommodation of homeless families. The accommodation that was in use in the female division was "gravely overcrowded" and at the same time the female wards were inadequately staffed. At the Mont Park and Sunbury institutions the female staff decreased by more than 50%. As might be expected in these circumstances the amount of sick leave of nurses increased greatly and a large percentage of their illness was due to overstrain, nervous exhaustion and similar causes. This condition was a deterioration since Dr. Catarinich had issued his previous report. When he made his present report there was a shortage in the department of approximately three hundred nurses; it seems safe to presume that the position is at the present time even worse. One result of the shortage is that at Mont Park all treatment of mental disorders by insulin shock therapy has had to be stopped, a happening which Dr. Catarinich is quite justified in describing as disastrous. This form of treatment which undoubtedly produces good results is, as Dr. Catarinich observes, time-consuming, and because it is not free from risk it demands continuous careful supervision of the patients by both medical and nursing staffs. Nurses have been specially trained for this work at Mont Park, but the demand on their time has been so great that it has been physically impossible for them to do this special work as well as the ordinary routine work in the wards. It is not to be wondered at that the health of some of these women suffered. Dr. Catarinich pays a tribute to them when he states that the institutions in his care are now dependent to a very great extent on the services of senior nurses who have remained faithful to their calling in spite of the burdens imposed on them. The conditions described in Victoria can be paralleled in New South Wales. In some of the mental hospitals in that State the number of patients sleeping in wards is half as many again as the wards are intended to accommodate, and the patients have to enter sideways "like crabs" when they want to go to bed, emergency beds being placed in every available space. It is true that a statement has appeared in the newspapers that the Government has decided to build a new mental hospital in one of the Sydney suburbs at the cost of a million pounds. If this hospital is eventually built, the problem of finding staff will remain, for staff shortages amount to as much as 50% in some institutions. In regard to insulin treatment, the New South Wales department, we understand, has never had available sufficient ward accommodation to enable this to be carried out to any great extent.

It does not simplify the problem in any way to point out that what is happening in Australian mental hospitals is happening elsewhere; on the contrary it probably makes it the more difficult. The latest report of the Board of Control in Great Britain—the report for 1945, published at the end of 1946—shows that during the war the nursing staffs of mental hospitals, for example, suffered shortages amounting in some areas to one-third of the normal staff. It is one thing to state a problem, but quite a different matter to find a solution for it. In all probability general shortage of manpower lies at the bottom of the whole trouble. It has been estimated that something like 80,000 more women are engaged in Australian industry at the present time than were so occupied in 1939. Most of them, we must presume, are there because they are needed. As there is a shortage of workers, those who work will not unnaturally pick and choose from the types of work that are offering and most of them will decide on what is most congenial and offers the best pay. It would be foolish to suggest that mental hospital authorities should enter into competition with other services in the matter of wages and conditions. At the same time it must be agreed that the remuneration of all workers in mental hospitals should be adequate and possibly that pay should be increased when particularly arduous or unpleasant duties have to be undertaken. It will also be agreed that environmental and other conditions should be as good as they can possibly be made. Beyond this there does not seem to be much that can be suggested. The Board of Control in England has nothing else to put forward. If there are not enough people to do the work that has to be done, then some of the work will have to be left untouched, deleted from the community's programme, or more workers will have to be found, or those who work will have to work a lot harder than they do. Let us take these in turn. If some work has to be left untouched, it must not be that of caring for mentally afflicted persons in mental hospitals—the duty of the community to those who cannot help themselves has been stated. To find more workers will be difficult. Two possibilities present themselves—people who have reached the retiring age may be encouraged to continue at some occupation that is within their capacity, and secondly, some arrangement may be made according to which part-time duty may be undertaken by those able to do it and nothing more. In regard to the suggestion that people should work harder, it would be foolish in the present temper of society to think that people should work for longer hours or even that working hours should not be reduced. What can be held, however, and even preached from the housetops, is that those who work should give of their very best while they are working. Many, of course, are already doing this—the nurses, mentioned by Dr. Catarinich, who worked to the limit of their physical capacity are examples of what happens oftener than many among us suspect. The whole question boils down to one of personal responsibility, responsibility to what is best in ourselves and to the whole body politic of which we are a part. The manpower shortages will in all probability be made good before very many years have passed, and when that happens the troubles of mental hospital administrators will become less. If in the meantime an increased sense of responsibility has developed in the individual and in the whole community, mental hospital problems will vanish.

Current Comment.

DICUMAROL.

INCREASING interest is being shown in the use of anticoagulants. Heparin has been found of value in carefully chosen conditions, though its cost is a drawback. Dicumarol, which can produce lowering of the prothrombin level in the blood, has certain advantages and may be given by mouth. The avoidance of constant needle pricks may not be an important matter if safety and recovery from illness are in the balance; but it is decidedly something to aim at if possible. A census of patients treated with penicillin would surely support this view. Provided that the prothrombin level can be estimated daily if required, this form of therapy is within the range of any careful practitioner. Thrombosis is not only an unwelcome post-operative anxiety of the surgeon, for there are few branches of medical work in which it may not arise. A good summary of the present position in the field of practical therapeutics is given by John B. Levan in a paper dealing with the technique and principles of treatment with dicumarol.[1] He remarks that the physically more impressive thrombophlebitis is much less dangerous than an insidious clot formation which may only announce itself by the occurrence of some embolic accident. Therefore, the possibilities should be well considered in any illness which confines to bed a person of forty years of age or more. The risk is of course not confined to this time of life; but the frequency of thrombus formation is much greater in those who have passed the half-way mark. In certain instances, therefore, the estimation of the prothrombin level may be of value in order to decide whether the use of an anticoagulant is indicated as a safeguard. When there is good clinical reason to suspect the presence of clots in the veins, particularly those of the lower limbs and the pelvis, the indications for such treatment are strong. The coagulation time of the blood may be to some extent controlled by dicumarol, but its action is best controlled by serial tests of the prothrombin level in the blood. Levan advises the method of Quick; at first he himself employed the Russel viper venom method, but he changed this because of the difficulty in procuring supplies of the agent concerned. In order to evalute the results of whatever test is employed, it is of course necessary to use a constant technique and to recognize the variations which may occur. There is no general agreement as to the amount by which the prothrombin level should be lowered in order to remove the risk of thrombosis in any given case. Levan appears to agree with those who advise half or less than half of the normal level as an effective and safe objective. Nine of his sixty patients showed excessive response to dicumarol. This is a smaller percentage than has been recorded by some other workers, but it is important to realize that the reaction of individual patients varies considerably. True, the only toxic effect is the occurrence of hæmorrhage; but this is a potentially serious condition. In some of the author's cases not only did the tests indicate an unwelcome drop in the blood prothrombin level, but actual hæmorrhagic episodes occurred, such as hæmaturia. If such an accident does occur, the administration of vitamin *K* is desirable; Levan advises one massive dose of 60 milligrammes. Transfusion of whole blood may also be effective. But such complications should not occur if the precaution is taken of having regular blood assays made, and particularly if the delayed action of dicumarol is remembered. The usual initial dose is 300 milligrammes, and this may be followed the next day by 200 milligrammes, with the proviso that the prothrombin level should be determined before any dose is given. A lag of twenty-four to seventy-two hours takes place before the full effect of the drug is observed. Therefore, it is important not to proceed to the administration of maintenance doses until the exact position is known. "Blind" dosage is strongly discouraged. One useful routine is advised in this article: that is the

[1] *Annals of Internal Medicine*, December, 1946.

keeping of a special chart on which the results of pro-thrombin estimations and coagulation times are recorded, together with the dose of the drug. This precaution is perhaps comparable with the keeping of a fluid balance chart in appropriate cases; its value lies not only in its information, which may not always be quite accurate, but also in the fact that its very presence insures that the procedures laid down are carried out. The maintenance dose will be smaller than the initial dose, and may be of the order of 100 to 200 milligrammes per day. Prolonged dosage does no harm provided due precautions are taken. Frank Marsh, writing recently on the subject, lays it down that a dose of 300 milligrammes will not exert its maximum effect in less than forty-eight to seventy-two hours, and that it is possible to overdose the patient seriously if further doses are given till stabilization is effected.[1] This caution was in connexion with an inquiry about the use of dicumarol in coronary occlusion, a condition in which it is now being tried. The general opinion is that a prothrombin time of thirty seconds or so may be aimed at; but dosage should be so designed as to keep the blood prothrombin level at this figure, but not above, for fear of hæmorrhage. Though the use of this agent certainly adds to the complexity of treatment, its value should encourage extensions of its use.

TYPHOID FEVER.

THE enteric group of fevers are generally quoted as one of the bright gems in the invisible crown of the hygienist, and where his preventive measures can be applied faithfully, this they certainly are. Nevertheless, in the bodies of carriers, and perhaps in other obscure places, the organisms still maintain their capacity to infect and, having infected, they will always kill in a certain proportion of cases. Wars have provided some of the best examples of the application of preventive inoculation and its power to banish typhoid and its related fevers from the serious wasters of manpower. Even with these precautions it occasionally becomes evident that the old enemy still lies in wait, to take advantage of any decline in the antigenic potency of the vaccine or other slip. Even in the recent war the importance of maintaining a high antigenic capacity in laboratory strains has been demonstrated. But apart from this, the civil community is full of people who are unprotected against typhoid fever, and as many practising physicians will recall from their own experiences, outbreaks still occur from time to time. Byron M. Stuart and Roscoe L. Pullen present a study of no less than 360 cases of typhoid fever.[2] Their unusual experience in this direction is drawn from work at the Charity Hospital, New Orleans. They point out that the incidence of this disease is declining in the United States, and also in the Mississippi valley, though this area still provides more cases than other States in proportion. Most of the patients had not been immunized, but it is stated that 41 of them were said to have received three doses of vaccine within sixty days of the beginning of their illness. No further details are given, but the patients were at the time living in areas where the disease was endemic, and in 27 instances they were exposed to the risk of infection in their homes. Most of the patients came from rural communities, and a history of the drinking of water from wells and streams was common. The diagnosis of typhoid fever is not always straightforward, on account of its rather slow onset. In nearly half of these patients respiratory symptoms occurred in the early stages. Many of them apparently were febrile for varying periods without being aware of it. Only 10% had a rapid onset, with a slight chill. Headache was of course common, with anorexia, and it is of interest that sore throat was also common. Diarrhœa was unusual in this series, conforming to the customary finding. One-third of the patients had demonstrable rose spots; but this aid to diagnosis was seen in a much smaller percentage of Negro patients. The authors remark that nearly all the Negroes in whom these spots were seen had light skins. Another interesting finding was the occurrence of multiple furuncles. These were not seen in a large number of persons, but in three of these instances typhoid bacilli were grown from the furuncles. Fever was variable in degree. On the average, with the exclusion of fatal cases, the febrile period was thirty-three days, but it varied from seventeen to one hundred and nine days. The nervous system was commonly affected. Delirium was fairly frequent, and psychosis occurred in a few instances. One striking feature was that nuchal rigidity or other manifestation of nervous involvement caused lumbar puncture to be performed in over 12% of cases. In one of these the protein level in the spinal fluid was raised, over 900 cells per cubic millimetre were counted, and culture produced a pure growth of the *Eberthella typhi*. This patient recovered. Transient deafness was noted in only five cases in the series. This is a surprisingly low figure, for affection of hearing has often been noted in Australian series, though perhaps if the figures were taken out they would not be so high as expected. The respiratory symptoms have been referred to already; they were of sufficient severity to cause nearly half the patients to be radiologically examined. Perhaps, however, this is symptomatic of modern medicine, for in the films of the majority of patients so examined no abnormality was seen. The usual slow pulse was mostly observed, and in a third of the patients it was dicrotic in type. This is of interest in view of the importance attached to this sign in the days when the disease was commoner. Abdominal distension, a sign of some sinister significance, was noted in nearly 80% of cases, and in 30 cases it was of sufficient degree to be regarded as an indication for the use of a suction apparatus. Intestinal hæmorrhage occurred in 20% of cases, usually after the second week of illness; but in most cases the course of the illness was not seriously influenced. There were seven proved instances of perforation, laparotomy being performed eight times. Of the patients operated upon, only three survived. Only ten patients showed evidence of cholecystitis, and in seven of these cases typhoid organisms persisted in the stool and also in the bile. Cholecystectomy was performed in four of these cases. Four pregnant patients had abortions during the illness. With regard to diagnosis, attempted culture of organisms from the blood proved the most reliable method. Agglutination tests were not so accurate; only about 60% revealed significant titres. The authors stress the importance of adequate laboratory tests, remarking that the demonstration of bacilli in the blood, urine or stools at some stage of the illness, or a conclusive response to the Widal test, preferably with an "O" antigen, is necessary for diagnosis. In this connexion the admission diagnoses are of interest. Sixty-eight *per centum* of patients were given the correct diagnosis on their admission to hospital; but over 10% were thought to be suffering from some other infection, and nearly as many were regarded as having a respiratory disease. Finally, the mortality rate was a little over 12%. Death was due in most instances to overwhelming toxæmia rather than to any particular complication. Treatment included the use of a liquid diet yielding 3,000 Calories. Blood transfusions were given to half the patients, either for anæmia or for general reasons. In about one-third of the cases a sulphonamide drug was used, but no striking results were obtained. This group of patients had a lower mortality rate; but the authors think that the only demonstrable value of the sulphonamide drugs was the effect on other complications, such as those affecting the lungs. One minor point may be noted. Stuart and Pullen tried the effect of amidopyrine and also of quinine, but the only result they observed was the occurrence of bizarre changes in the temperature. A generation ago amidopyrine was similarly tried in some Australian hospitals and exactly the same conclusions were reached. This is an interesting article, not only for its information, but for the revival of study of a disease whose manifestations are still worth attention, the undoubted triumphs of preventive medicine notwithstanding.

[1] *British Medical Journal*, December 21, 1946.
[2] *Archives of Internal Medicine*, December, 1946.

Abstracts from Medical Literature.

OPHTHALMOLOGY.

Corneal Ulcer Treated with Streptomycin.

N. F. ALBERSTADT AND A. H. PRICE (*American Journal of Ophthalmology*, September, 1946) treated nine patients suffering from corneal ulcer with streptomycin, atropine and heat, and thirteen patients suffering from corneal ulcer with atropine and heat alone; they compared the results, using as criteria (i) duration of pain, (ii) healing time of the ulcer, (iii) total number of days spent in hospital. Streptomycin hydrochloride was used in a concentration of 10,000 units in each millilitre of normal saline solution. Two drops were placed in the affected eye every two hours day and night. The control group of thirteen patients averaged twenty days in hospital, in comparison with an average of fifteen days in hospital for the nine patients treated with streptomycin. The average duration of pain in the control group was four or five days, whereas in the group treated with streptomycin the pain was usually gone by the second day. The authors conclude that the duration of pain was shortened, the healing accelerated, and the total stay in hospital shortened by the use of streptomycin.

Transplantation of the Human Vitreous.

N. L. CUTLER (*Archives of Ophthalmology*, June, 1946) presents a preliminary report on the transplantation of the human vitreous. He decided to transplant clear vitreous into the eyes of patients with persistent unabsorbed hæmorrhage in the vitreous who had normal intraocular tension and good light projection. Under "Pentothal" anæsthesia the sclera is exposed and a small incision is made with a cataract knife between a previously placed "0000" silk mattress suture. With an 18 gauge needle and a five millilitre syringe, 1·5 millilitres of vitreous are withdrawn and two millilitres of clear vitreous from an eye which has been enucleated a few minutes before are introduced. The needle is quickly withdrawn and the suture tied. Atropine sulphate is instilled and a binocular dressing is applied. The patient is allowed up on the fourth or fifth day. To prevent retinal detachment Cutler also recommends a ring of diathermy punctures made at the operative site two weeks before the transplant. The details of three cases are recorded.

Cyclodialysis in the Treatment of Glaucoma.

S. D. MCPHERSON (*American Journal of Ophthalmology*, July, 1946) records the results of cyclodialysis performed in 140 cases at the Wilmer Institute. The conditions are divided into three categories: chronic primary glaucoma, glaucoma following cataract extraction, and glaucoma secondary to active uveitis. Cyclodialysis was performed in 56 eyes with chronic primary glaucoma. In twelve of these cases cyclodialysis was the initial procedure, in the remainder the patients had had one or more operations for glaucoma. Twelve months later nineteen of these patients had normal intraocular pressure. One of these patients later developed a tension over thirty millimetres (Schiotz). Failure of operation was evident in the first month after operation in 78% of the unsuccessful cases, and by the end of the first year 96% of the failures had occurred. The operation was performed on 53 eyes with glaucoma following cataract extraction; 39 patients were followed for a minimum of one year. In fourteen of these eyes the tension was still normal after twelve months. Cyclodialysis was performed on 31 eyes with glaucoma secondary to active uveitis and all were observed for at least twelve months. At the end of that period in only two cases was the tension less than thirty millimetres of mercury (Schiotz). The most frequent early complications were anterior chamber hæmorrhage and vitreous hæmorrhage. The author further classifies results according to the depth of the anterior chamber, and he noted that cyclodialysis was more effective in eyes with deep than with shallow anterior chambers in both chronic primary glaucoma and glaucoma following cataract extraction.

Changes in the Lens of the Embryo after Rubella.

F. C. CORDES AND A. BARBER (*Archives of Ophthalmology*, August, 1946) were fortunate to receive a single eye of an eight-weeks-old embryo. Pregnancy had been terminated by curettage which was performed three weeks after rubella had been diagnosed in the mother. Microscopic examination revealed that the surface epithelium was absent (artefact) and the lids did not cover the eye. The optic cup was well formed, the outer and inner walls of the optic cup had become approximated and the fœtal fissure had closed. The hyaloid system was fully developed. The posterior portion of the retina had differentiated into two layers, the inner and outer neuroblastic layers. Mesodermal tissue covered the anterior surface of the lens, but the anterior chamber had not formed. The subcapsular epithelium of the lens showed distortion and disorientation of the cells at the anterior pole. The primary fibres had elongated, but did not completely fill the cavity of the lens vesicle. These fibres were swollen and stained poorly, appearing vacuolated at their anterior ends. The nuclei also stained unevenly. The lens capsule was difficult to trace. Sections were compared with sections from normal embryos. The stage of development of the posterior portion of the eye was approximately that of a seven-weeks-old embryo, the lens showing retarded development, with vacuolation and early degeneration of the primary fibres at the anterior pole. Thus there was normal development of the posterior portion of the eye; development of the anterior portion, lens and anterior chamber was retarded. Normally the cavity of the lens vesicle is obliterated at the sixth week. In this specimen a remnant of this cavity remained to the eighth week. This together with distortion and vacuolation of the anterior ends of the primary fibres would indicate that the action of the toxic agent occurred approximately during the sixth week of embryonic life, coinciding with the history of rubella in the sixth week of pregnancy. The authors suggest that the absence of lids and of Descemet's and Bowman's membranes during the first three months of pregnancy may permit the toxic agent in the amniotic fluid to act fairly directly on the lens during this time.

Observations on the Vossius Ring.

T. GUNDERSEN (*American Journal of Ophthalmology*, July, 1946), in a period of ten months, saw nineteen Vossius rings in fifteen patients. They all occurred in young soldiers and all had been wounded in battle. Intraocular hæmorrhage was present in every eye, and thirteen showed vitreous hæmorrhage, and except in two instances, the vitreous hæmorrhages were localized and circumscribed near the retina and usually in the far periphery. The size of the rings varied between 2·25 and 2·75 millimetres. As eight injuries occurred in daylight, five during darkness and one at twilight, there can be no relation between the size of the Vossius ring and the size of the pupil before injury occurred. The ring is composed of fine brown dots arranged in an evenly distributed pattern. Its outer border is smooth, but its inner border, which is nearer to the smooth free iris border, is distinctly irregular. If the Vossius ring was an imprint of the pupillary margin, one would expect the inner border to be smooth. The author quotes this as strong evidence that the iris margin is not imprinted on the lens capsule. He also noted that in a patient with sympathetic uveitis within a perfect circle of 2·75 millimetres diameter on the centre of the anterior lens capsule, there was a distinct area of clearing of precipitates; this phenomenon is interpreted as indicating that interchange of fluids through the anterior lens capsule takes place chiefly here. The cause of the Vossius ring is still speculative. However, the original theory that the ring is caused by impact of the iris onto the lens is now considered untenable. The most favoured theory is that the origin of the ring is hæmatogeneous, that blood pigments from the aqueous are deposited in characteristic fashion during the interchange of fluids through the anterior lens capsule. However, the mere presence of blood is insufficient as Vossius ring does not occur in non-traumatic hyphæma.

Reduction of Reflections.

R. GRAHAM (*Archives of Ophthalmology*, September, 1946) considers that one of the most significant of technical advances to come out of the recent war is the coating of lenses with reflection-reducing films. The history of this development dates back to 1892, when Taylor, a designer, noticed that iridescent tarnish which appeared on certain old camera lenses did not reduce the light they transmitted, but increased it instead. The physical conditions for the production of zero reflection of monochromatic light are: (i) the film must equal in optical thickness one-quarter of the wave-length of the incident light, and (ii) the refractive index of the film must be the geometrical mean of the indices of the first and second media. Under the most usual conditions, air to glass, the index of the intervening film should equal the square root of the index of the glass and the film should be 0·000004 inch thick. The author considers that the best process is that wherein a thin film of magnesium fluoride is deposited on optical surfaces in a high vacuum and under considerable heat. For ophthalmic use the coat must be rugged,

for it is exposed to repeated cleaning and much abrasion. The reduction of reflections is only about 50%; scratches on the coated surface are more visible, for the light they reflect is more apparent against a dimly reflecting, coated surface than it would be against an uncoated one. Reflections from glasses are not a serious problem until the intensity of reflections exceeds the tolerance of the patient. The tolerance of reflections will be lowest in neurasthenic and hypercritical patients. Reflections can, and often do, conceal the eyes of the wearer from anyone looking at him. To clergy, teachers and all who wear glasses when appearing before groups of people this is a serious impediment. Their expressions are masked, and the glare, coming out and going as the speaker turns, is disturbing to the audience. Coating will considerably reduce such masking of the eyes.

The Scleral-Resection Operation.

D. VAIL (*American Journal of Ophthalmology*, July, 1946) gives his experience and reviews the literature relevant to the scleral-resection operation. It has been employed successfully in cases of retinal detachment, high myopia and scleral staphyloma without retinal detachment. The author holds that the operation could be considered for removal of a melanoma of the chorioid in an only eye, an area of severe episcleritis or inflammatory nodule, or a malignant lesion in the sclera, or for excision of disintegrating areas or plaques in the sclera in *scleromalacia perforans*. He describes the technique which he used in the case of an equatorial scleral staphyloma in a woman, aged fifty-seven years. The patient had a balloon detachment of the retina in the upper temporal area. When the overlying sclera was exposed in preparation for diathermy, a large equatorial scleral staphyloma was encountered. It measured 12·0 by 15·0 millimetres and was between the superior and external rectus muscles. two double-armed sutures were inserted along the edges of the staphyloma and a fixation suture was placed in the centre of the ectasia. The ectasia was excised; subretinal fluid and fluid vitreous were lost. The sutures were tied quickly and a third was placed between them. The retina was reattached.

OTO-RHINO-LARYNGOLOGY.

Secretory Otitis Media.

W. W. EAGLE (*Annals of Otology, Rhinology and Laryngology*, March, 1946) states that the condition known as "catarrhal *otitis media*" and "hydrops of the middle ear", while no new clinical entity, has of late been observed much more frequently by him. He prefers the term "secretory *otitis media*" as a descriptive title for the disease. The condition is believed to be a result of Eustachian tube obstruction. A sterile viscid fluid collects in the middle ear, giving rise to a sensation of fullness in the ear, bubblings when the nose is blown, tinnitus, autophony, numbness over the entire side of the head, slight dizziness and mild impairment of hearing, which may vary with changes of head posture. The diagnosis is usually suspected from the history. Inspection usually reveals what could be considered a fairly normal ear drum. There is no bulging, but there may be slight retraction and the light reflex may be diminished in brilliance or perhaps wider and dispersed. A fluid level is found in some cases. The fluid may appear bluish grey. There may be yellow whorls like marble, or bubbles may be evident. When the middle ear is filled with fluid so that no line or contrasting levels are discernible, the fact that there is fluid in the middle ear may be overlooked. The condition may persist for weeks, and in some instances apparently for months or even years. There may be a tendency to recurrences in some individuals. Myringotomy has rarely been recommended in the past. The author's method of treatment lies mainly in the fact that he does incise the drum. These ears, which are not truly inflamed, tolerate the small incision required without anæsthesia. The fluid in the middle ear is usually quite viscid and often requires to be aspirated from the drum, and may refuse to be drawn out until a small second puncture is made anteriorly to permit the entry of air. Cessation of symptoms is immediate. The incision will usually heal in a few hours' time. Secondary suppuration very rarely occurs. Usually there is no recurrence of fluid, but there are some cases in which recurrence takes place on several occasions, and in rare instances there has been a tendency to recurrences for a period of six to twelve months. It is rarely necessary to catheterize and inflate the Eustachian tube, the exception being those cases in which the disease is prolonged and numerous myringotomies are required. One hundred and seventy-two cases of secretory *otitis media* have been studied since 1940. In most of these treatment was undertaken early in the course of the disease and with satisfactory restoration of function. One patient was seen by the author four years earlier, and at that time was noted as having fluid in the middle ear, but no incision was then performed. The patient returned after four years of continuous deafness and underwent myringotomy with restoration of normal hearing.

A Surgical Technique for the Relief of Tinnitus Aurium: Tympanosympathectomy.

JULIUS LEMPERT (*Archives of Otolaryngology*, March, 1946) was interested by the confusing observations of the presence or absence of tinnitus in deafness of non-suppurative origin, and from his own conclusion that in cases of suppuration, when polypi or cholesteatomata filled the tympanum, proper tinnitus was absent, but was often present when suppuration was limited to the epitympanum. The author made a careful study of the visible tympanic structures in 100 cases of otosclerosis in which the fenestration operation was performed and compared these with a series of sixty cases of middle ear suppuration in which mastoido-tympanectomy was required. In the former group, apart from the changes about the oval window associated with otosclerosis, the only striking feature was congestion about the promontory. In the suppurative group a constant feature was the almost total absence of the normally discernible tympanic plexus and the grooves on the promontory which it occupies. The author reasoned that perhaps an inflamed tympanic plexus caused tinnitus, whereas destruction of the plexus made tinnitus impossible, and that if this was true, excision of the plexus should cure chronically persistent tinnitus. In performing mastoido-tympanectomy in two cases, he carefully removed the periosteum covering the promontory together with the tympanic nerve plexus. Both these patients had suffered from tinnitus, and both were cured of this symptom after the operation. The author believes that in many cases tinnitus may be a tonus impulse transmitted from the tympanic plexus and ganglion cells associated with it. In congestive states, trauma and toxic conditions, irritation may occur, and with resolution tinnitus subsides. In chronic suppurative states degeneration of the ganglion cells and plexus may occur and tinnitus is no longer possible. If this theory is correct, removal of the tympanic plexus should result in cure of tinnitus in certain cases. A technique has been devised for this purpose. To obtain access, the external auditory canal is widened by the making of an incision radiating upwards and outwards in the outer third of the supero-posterior wall. The lower half of the *annulus fibrosus* about the tympanic membrane is disengaged from the *sulcus tympanicus*, and a flap formed of the lower half of the tympanic membrane is lifted up, the middle ear and promontory being exposed. The tympanic plexus is then removed together with the periosteum of the promontory, and the tympanic membrane flap is returned to its normal position. The operation has been performed on fifteen patients suffering from chronically persistent tinnitus; in ten of these cases the symptom has completely ceased.

Evaluation of "Benadryl" as a Therapeutic Agent for Vasomotor and Allergic Rhinitis.

E. A. THACKER (*Archives of Otolaryngology*, June, 1946) states that β dimethylaminoethyl benzhydryl ether hydrochloride produced by Parke, Davis and Company under the name "Benadryl" appears to have some action in protecting the tissues against the effects of histamine. Cases of vasomotor rhinitis, of perennial allergic rhinitis and of allergic rhinitis with asthma were tested with the drug. A daily intake of 150 to 400 milligrammes given in doses of 50 to 100 milligrammes three times daily or as often as every three hours was employed. In many instances the drug was given for a period and then withheld and then given again, in order to check the effects. Complete relief of symptoms was obtained in 26%, definite improvement in a further 20·8%. There was slight or no benefit in 54%. Why the drug was effective in some allergic cases yet was not of benefit in others is unexplained. No serious side effects were observed. Drowsiness was the commonest complaint, but usually disappeared after the first day or so. Dryness of the mouth, slight nervousness, slight dizziness, epigastric distress and diarrhœa were amongst the effects occasionally encountered. There is no evidence that permanent relief of the nasal symptoms may be induced so that the drug may eventually be abandoned; apparently "Benadryl" exerts a controlling effect only. Its use on the days preceding allergy skin testing is to be avoided as it is likely to interfere with the weal and pseudopodia formation.

British Medical Association News.

MEDICO-POLITICAL.

A MEETING of the Victorian Branch of the British Medical Association was held at the Medical Society Hall, Albert Street, East Melbourne, on March 5, 1947, DR. A. E. COATES, the President, in the chair.

Statement of Receipts and Expenditure.

Dr. J. A. Cahill, the Honorary Treasurer, presented the statement of receipts and expenditure of the Victorian Branch of the British Medical Association and of the Medical Society of Victoria for the year ended December 31, 1946. In presenting the statement, Dr. Cahill spoke in the following terms:

I have pleasure tonight in presenting the statement of receipts and expenditure of the British Medical Association and the Medical Society of Victoria for the year ended December 31, 1946.

The credit balance at the end of the year was £1,064 19s. 6d., being £135 19s. 4d. better than at December 31, 1945. We had in the National Bank £43 10s. 2d., in the Savings Bank of Victoria £504 9s. 4d., in Commonwealth Bonds £500, and cash in hand £17.

Subscriptions from members for the year amounted to £10,566, being £1,940 more than in 1945. Out of that amount we had to pay the British Medical Association, London, £2,481 15s. 9d., being at the rate of £1 5s. 6d. per member *per annum*, and for which you receive the *British Medical Journal*, to THE MEDICAL JOURNAL OF AUSTRALIA £1,882 at the rate of £1 per member, a Federal Council capitation fee of 10s. per member amounting to £923 10s., while £1,236 11s. 3d. was the proportion due to the Organization Fund instituted in the year 1943. We were then left with £4,042 7s. 5d., which, however, was insufficient to meet the expenditure for the year. Interest on investments—bonds and Savings Bank—amounted to £20 14s. 4d. and sales of journals realized £3 19s. 6d. The British Medical Insurance Company of Victoria, Limited, again made us generous donations—£300 towards the Medical Secretary's salary and £98 11s. 11d. towards library expenses. In addition the insurance company saves us £134 *per annum* interest on debentures. The company has taken over debentures of deceased members to the value of £3,350, and on that amount we pay only 1%, being 4% less than the interest paid on

BRITISH MEDICAL ASSOCIATION (VICTORIAN BRANCH) AND MEDICAL SOCIETY OF VICTORIA.

Combined Statement of Receipts and Expenditure, Year Ended December 31, 1946.

RECEIPTS.	£ s. d.	£ s. d.
To Balance at December 31, 1945—		
National Bank of Australasia Limited—Medical Society of Victoria	2,326 10 0	
State Savings Bank of Victoria	128 17 0	
Commonwealth Loans	500 0 0	
Cash in Hand	12 0 0	
	2,967 7 0	
Less National Bank of Australasia, Limited, overdraft, British Medical Association	2,038 6 10	
		929 0 2
„ Subscriptions		10,566 4 5
„ Victorian Medical Benevolent Association		277 0 9
„ British Medical Insurance Company—Grant		300 0 0
„ Sale of Journals		3 19 6
„ Sale of List of Members		7 12 6
„ Interest on Investments		20 14 4
„ Federal Council Organization Fund		21 19 0
„ Federal Medical War Relief Fund		4,135 13 9
		£16,262 4 5

EXPENDITURE.	£ s. d.	£ s. d.
By British Medical Association, London		2,481 15 9
„ THE MEDICAL JOURNAL OF AUSTRALIA		1,882 0 0
„ Victorian Medical Benevolent Association		277 0 9
„ Federal Council of the British Medical Association—Capitation Fees		923 10 0
„ Rebates to Subdivisions		32 2 0
„ Medical Society of Victoria Organization Fund		1,236 11 3
„ Medical Society of Victoria Debenture Redemption Account		134 0 0
„ Library Books and Journals *et cetera*	298 16 0	
Less Contribution from British Medical Insurance Company	98 11 11	
		200 4 1
„ Salaries		2,561 10 10
„ Federal Council Organization Fund		21 19 0
„ Life Assurance Premium		162 17 6
„ Federal Medical War Relief Fund	4,135 13 9	
Less Expenditure incurred	26 0 0	
		4,109 13 9
„ Debenture Interest		189 15 0
„ Audit Fees		16 16 0
„ Postages		287 16 2
„ Printing and Stationery		255 19 9
„ Sundry Expenses		101 19 11
„ Bank Charges and Exchange		5 8 4
„ Telephones		82 15 5
„ Lighting and Heating		82 3 3
„ Gas Radiator		9 19 1
„ Office Furniture and Equipment		9 13 0
„ Rates, Taxes and Insurance		51 6 9
„ Repairs		7 12 3
„ Legal Expenses		28 3 0
„ Travelling Expenses		2 15 11
„ Entertainment		32 1 8
„ Donations		2 2 0
„ Australasian Medical Publishing Company, Limited — Lists of Members		7 12 6
By Balance at December 31, 1946—		
National Bank of Australasia, Limited, Medical Society of Victoria	2,241 4 10	
State Savings Bank of Victoria	504 9 4	
Commonwealth Loans	500 0 0	
Cash in Hand	17 0 0	
	3,262 14 2	
Less National Bank of Australasia, Limited, overdraft, British Medical Association	2,197 14 8	
		1,064 19 6
		£16,262 4 5

(Signed) C. H. DICKSON, Secretary. (Signed) J. A. CAHILL, Treasurer.

We report that we have compared the above Statement with the ordinary audited Statements of Receipts and Expenditure of the British Medical Association, Victorian Branch Account, and the Medical Society of Victoria Account and found them to be in accordance therewith.

Melbourne, January 20, 1947.

(Signed) J. V. M. WOOD AND CO.,
Chartered Accounts (Aust.).

debentures held by members of our Association. To the insurance company I desire to express on your behalf our appreciation of its generosity, and I would like to add that it behoves members to put what business they can in its way.

During the year a Debenture Redemption Account was opened, an amount of £134 (equivalent to the interest saved on debentures) paid into it, and £100 worth of debentures was subsequently redeemed.

To the Medical Practice Finance Company we advanced £25. This company was formed towards the end of the year. Dr. Dickson will have something to say about it in a few minutes.

I have now pleasure in moving the adoption of the statements of receipts and expenditure of the British Medical Association (Victorian Branch) and the Medical Society of Victoria for the year ended December 31, 1946.

The financial statement, which was adopted, is published herewith.

Medical Societies.

THE OBSTETRICAL SOCIETY OF THE WOMEN'S HOSPITAL, MELBOURNE.

A MEETING of the Obstetrical Society of the Women's Hospital, Melbourne, was held at the hospital on October 15, 1946. DR. A. M. WILSON occupied the chair.

In opening the meeting the chairman said that the occasion had special significance as it was the first meeting of the obstetric staff since the death of Professor R. Marshall Allan. Dr. Wilson referred to his outstanding record as a soldier and as a practitioner in Brisbane before he accepted the chair of obstetrics at the University of Melbourne. As professor of obstetrics at the University of Melbourne and as a member of the staff at the Women's Hospital he had proved a sound adviser, a most capable teacher and true friend to hundreds of students and practitioners who were fortunate enough to be associated with him.

Trial Labour.

DR. W. IVON HAYES opened a discussion on trial labour. He said that normal labour was the progressive extrusion of the child from the uterus into the outside world, this process being accomplished by a succession of normal uterine and accessory contractions. It had to be appreciated that the descent of the child and the contractions went hand in hand, so that normal contractions produced normal progress, and normal progress was always accompanied by normal "pains". The uterine contractions in the first stage of labour were regular, occurred every three to five minutes, lasted about 25 seconds, and each gradually rose to a peak, which was held for a time, and then the contraction gradually subsided. During the stage of expulsion, the "pains" had the same character, but occurred every five to seven minutes, lasted forty to fifty seconds, and were assisted by the voluntary bearing down efforts of the patient.

The descent of the head could be followed by palpation through the lower part of the abdominal wall, and when this was no longer possible, by palpation from below. Repeated examination with Pawlik's grip during the first stage of labour would show that the head settled down into the pelvic brim and became more flexed, and as it steadily sank, the amount of the head which was palpable above the pubes grew less and less, until only the forehead remained above the brim. Later the forehead disappeared, and from this time a normally sized head could always be felt by post-anal palpation, or preferably, by pressing upwards and forwards with the finger through the soft tissues of the ischio-rectal fossa. When a patient was examined in this manner, the presence of the head had to be sought, its position in relation to the coccyx had to be determined, and the amount of descent during a contraction ascertained. The last finding was important, as it showed the ability of the head to descend and the absence of any impaction. When the head could be seen through the vulva, its station or level might be estimated, and the amount of descent with a contraction might be observed.

Abnormal labour was recognized by cessation of progress and by abnormal uterine and accessory action. If the head did not flex, and remained above the brim so that the same amount was palpable on repeated examination, if the head stayed at the same level in the pelvis and did not descend with a contraction, or if the head could be seen within the vulva but no advance was being made, then in each case progress had ceased, and it was evident that some difficulty or obstruction was present. Lack of progress was reflected in an alteration in the character of the contractions, which became irregular, less frequent, shorter and weaker, but sometimes the "pains" were augmented in an attempt to overcome some difficulty. If the increased effort to pass an obstruction was successful, labour then proceeded normally, but if the difficulty was insurmountable, either uterine inertia or rarely threatened rupture of the uterus would follow.

The three factors concerned in labour were the size and shape of the pelvis and the resistance of the soft parts, the actual and effective size of the child, and the powers of expulsion of the uterus and accessory musculature. A contracted pelvis might be present if the patient was unusually small or deformed, or of masculine build, or had an abnormal gait, or if she gave a history of pelvic injury. The pelvis should then be measured. External pelvimetry was misleading and inaccurate, and should be discarded. Internal digital examination might reveal a shortened diagonal conjugate, an android or funnel pelvis, a deformity caused by fracture, or some abnormality of the soft parts. Radiography gave a true picture of the size and shape of the bony pelvis, but this refined pelvimetry was of little practical value, unless it revealed grave deviations from the normal.

If the patient had had children, her history should be elicited and analysed, especially in regard to the length of labour, the weight of the children, and the cause of any stillbirth or neonatal death. If a grossly contracted or deformed pelvis was recognized from any method of examination, the patient should be delivered at term by Cæsarean section, but in all other cases labour should be allowed to proceed without any threat of major surgery or dire calamity.

Towards the end of pregnancy the fœtal head might be measured by Pawlik's grip, or more accurately by radiography, but the size of the head and the size of the pelvic brim were unimportant compared with the relationship which one bore to the other. This relationship might be determined by the classical method of Munro Kerr, or by placing the patient in Fowler's position, which brought the head down to the brim. The anterior surface of the pubes was now palpated and then the front of the head immediately above. If the head projected abnormally forward, disproportion was present, but if the head fitted into the brim, bore the normal relationship, or was fixed, there would be no difficulty at the superior pelvic strait. From this examination, performed during the last two to three weeks of pregnancy, patients might be classified into those presenting obvious and gross disproportion, those showing no disproportion, and those in whom uncertainty existed. Those with obvious disproportion (except that caused by hydrocephalus) should be delivered at term by elective section, but all others should be allowed to enter labour naturally and proceed under careful observation, which was directed especially towards the descent of the head and the character of the labour.

Discussing disproportion at the pelvic brim, Dr. Hayes said that when there was definite disproportion at the brim, the pregnancy tended to extend beyond the calculated date, and with labour there was primary uterine inertia. The head remained high, it did not fix, it projected abnormally forward, and it did not flex. With lesser degrees of disproportion, labour might come on at the expected time and progress normally with the head settling down, but then "pains" might deteriorate, the head cease to descend and become deflexed. Vaginal signs of disproportion at the brim were a sausage-shaped bag of water, early rupture of the membranes, and the reformation of the cervix when the membranes ruptured. In addition the cervix did not dilate, its edge became thickened, and was not closely applied to the head during a contraction. The head did not descend, but the presence of a large *caput succedaneum* and extreme moulding might simulate descent, the head was deflexed, there was an angle between the posterior surface of the pubes and the head, and there might be extreme asynclitism. All these signs were the result of non-descent of the head, and the patient should be delivered when this fact was certain. Because the cervix was not fully dilated and the head was not yet engaged, the only possible method of delivery which would avoid irreparable damage to mother and child was by Cæsarean section.

Disproportion in the cavity of the pelvis might be the result of actual disproportion where the head was in a good position and flexed, or because of an error in the fœtal attitude or mechanism. The diagnostic signs were those of secondary uterine inertia, and the impaction of the head, which prevented it from advancing or descending with a contraction. When the head ceased to descend, assistance should be given either to rectify some abnormality or to deliver with forceps, but if the cervix was still palpable and the head was in a good position, sedatives were used. This allowed further moulding of the head and stretching of the

soft parts to take place, when the uterus would again be able to produce further descent.

In regard to disproportion at the outlet, a resistant perineum and an occipito-sacral position of the vertex were the common causes of difficulty. There again there would be uterine inertia and lack of progress of the head. When it was recognized that descent had ceased, the patient should be delivered with forceps after a preliminary episiotomy.

The term trial labour had been introduced by Fitzgibbon to describe Nature's attempt to get the fœtal head through the pelvic brim of patients in whom slight disproportion was present or was suspected. It had been found, however, profitable to extend the idea of trial labour to apply to every labour and the whole course of labour. Every woman in labour should be carefully watched, and if her labour was normal and she delivered herself, her trial had been successful. If, however, because of obstruction at any level in the birth canal, she was unable to deliver herself, or would do so only after delay dangerous to the child or herself, then she had failed and needed help. This assistance might be section, version, correction of a malpresentation, forceps delivery or episiotomy. The fact that a woman had had a baby did not absolve her from a trial of labour, as the baby in question might be bigger, or might present abnormally, or be hydrocephalic, or the mother might now have a pelvic tumour, or a tight vaginal outlet from a previous repair. This conception of trial labour was invaluable in that it directed the careful attention of the obstetrician to the whole course of labour; it gave him certain criteria by which he might observe and follow the descent of the child, and it gave him a direct indication when interference was advisable or necessary. If these principles were remembered, obstetric cases became more interesting, the mother obtained more intelligent care, and the results to both mother and child were immeasurably improved.

DR. ELLIOTT TRUE spoke of the value of the lower segment Cæsarean operation and said that it had greatly reduced the maternal mortality and morbidity among patients requiring abdominal delivery. It was now used almost as a routine for all cases at the Women's Hospital. *Placenta prævia* was once thought to be a contraindication to the opening of the lower segment, but was no longer regarded as likely to cause excessive hæmorrhage. The operation could be performed as quickly as the classical procedure and later in labour without the risk of spreading infection. Post-operative complications were also less frequent and less severe. He also stated that the introduction of chemotherapy had made the operation still safer for "late" cases.

DR. JOHN GREEN said that he disagreed with the idea of applying a trial of labour in all cases. Certain patients called for closer observation in labour, and these should be subjected to the trial. Such patients could be selected by a study of their external pelvimetry, and if the measurements were decreased they should be followed through labour by frequent estimations of their "coefficient of progress". Patients who exhibited an unfixed fœtal head at term or who gave a history of previous difficult labour should also be subjected to a strict trial. Dr. Green suggested that four-hourly examination for progress during labour should be carried out from the time the membranes ruptured. If the membranes ruptured early labour should be allowed to commence and should then be assessed after twelve hours and thence four hourly. Long lingering labours associated with poor uterine contractions should be allowed to continue for a limited time, and he suggested thirty-six hours as a reasonable time limit. Dr. Green said that once the obstetrician had decided upon vaginal delivery, then he should wait until favourable conditions existed before delivering the baby. Generally these conditions were that the head should be well down in the pelvis and the os fully dilated. He added that many babies were lost because of attempts to save their lives. He said that of a review of 20,000 cases at the Women's Hospital under 200 were difficult labours, and most of these were anticipated by small pelvic measurement and an unfixed fœtal head at term. Referring to the use of sedatives in labour, Dr. Green said that "heavy" sedatives often diminished the efficiency of uterine contractions and had to be excluded. In cases of suspected difficulty he had found "Pethidine" and "Spasmalgin" of great use.

DR. GEORGE SIMPSON asked Dr. Hayes if he thought that diet had any effect on the size of the fœtus and suggested that milk should be limited to about one pint per day. He also suggested that ante-natal exercises were important in educating the patient to make the maximum use of her pains.

DR. D. F. LAWSON said that he believed that induction of labour had a place in the treatment of patients with doubtful disproportion. He quoted one case in which the patient had a septic arthritis of the hip joint and carried her baby three weeks beyond the expected date. He suggested that early induction of labour by means of a Drew Smythe catheter might have been useful in her case.

DR. A. M. HILL said that he agreed that the lower segment uterine Cæsarean section was a great advance in obstetrics and that it should be combined with the examination of the flora of the vagina. By methods developed in the pathology department at the Women's Hospital the flora of the vagina could be examined at frequent intervals after the rupture of the membranes. This routine practically eliminated the risk of sepsis to the mother and greatly reduced the risk of bronchopneumonia to the baby. Dr. Hill said that he thought that cases of contracted outlet of the pelvis existed in this country and occasionally a very late Cæsarean section was necessary for this condition. Radiological investigation was important in all such cases.

DR. A. M. WILSON said that he agreed with the idea that every labour was really a trial labour, but certain cases required specially careful observation. Unfortunately in some cases, particularly those of *primiparæ*, the uterus did not contract strongly, leading to drawn out labours, and on occasions, in spite of correct management, the baby was lost. In multiparous patients, with a previous history of difficult confinement, early induction of labour often avoided trouble. Dr. Wilson stated that in his experience, if the mother could push the baby well into the pelvic cavity it could almost certainly be delivered by the vaginal route with the aid of a deep episiotomy. He did not think that marked degrees of contracted outlet occurred very frequently in this country.

In replying, Dr. Hayes said that the accepted view that maternal mortality increased by 1% for each hour that the membranes were ruptured should not now apply. The determination of the method of delivery was not related to the time the membranes ruptured, but on the findings of repeated examinations during labour.

In reply to Dr. Green, Dr. Hayes said that he thought that external pelvimetry was of definite use in suspected cases of contracted pelvis, but this could not be depended upon alone.

Replying to Dr. Simpson, Dr. Hayes said that he thought that diet had a part in determining the size of the fœtus and that periodical weighing of the patient was important. Excessive gains of weight throughout pregnancy meant incipient toxæmia or large babies. Large women often had large babies and often developed uterine inertia when the uterus became incompetent because it had a job that was too great for it to perform efficiently.

Special Correspondence.

LONDON LETTER.

By OUR SPECIAL REPRESENTATIVE.

The British Medical Association and the National Health Service Act.

AT the end of last year there was an apparent deadlock between the Minister of Health and the members of the Negotiating Committee on the question of discussing the regulations necessary to implement the *National Health Service Act*. At a meeting held on December 11, 1946, the Council of the British Medical Association, after considering the result of the plebiscite, decided that the Negotiating Committee should be advised to refuse to negotiate on regulations because of "the divergence between the principles of the profession and the provisions of the Act". There was danger of a split in the profession on this point as the three English Royal Colleges and the Society of the Medical Officers of Health were prepared to continue discussions. To become operative this resolution of the Council had to be submitted to, and approved by, a meeting of the Representative Body, and such a meeting was called for January 28, 1947. Before this meeting was held the position changed after the publication, at Mr. Bevan's request, of correspondence which had passed between him and the presidents of the three colleges. The first move had come as a letter, signed jointly by the three presidents, asking for clarification on several important points which were in doubt. In his reply of January 6 the Minister of Health showed a conciliatory attitude which had been absent from previous communications, and, in view of this change of sentiment, a special meeting of the Council of the British Medical Association was held on January 15 to review the

position. At this meeting the earlier resolution was withdrawn and the following substituted.

> The British Medical Association, having considered the final results of the plebiscite and the Minister's letter of January 6th to the Presidents of the Royal Colleges, and desiring to secure for the people the best possible Health Service, is willing that discussions be entered into with the Minister to that end, *provided that such discussions are comprehensive in their scope, and that the possibility that they may lead to further legislation is not excluded*; and that after the conclusion of these discussions a second plebiscite be taken on the issue of entering the Service.

Special attention is directed to the words in italics. This resolution was confirmed at the Special Representative Meeting held on January 28 by 252 votes to 17 and so became the policy of the British Medical Association. At the same meeting the personnel of the Negotiating Committee came under review and discussion. This committee is elected from nine different bodies and/or associations, has a total membership of 32, of whom eight are appointed by the British Medical Association Council and eight by the Representative Body, making a total of sixteen direct British Medical Association representatives. It was decided that a new election for the British Medical Association sixteen be held as soon as possible, the Council to appoint their own eight members at their next meeting and the representatives to elect an equal number by postal vote as soon as this could be arranged. Proposals that the British Medical Association should have an absolute majority on the committee, that the majority of the British Medical Association representatives should be general practitioners and that a substantial number of younger men should be chosen, were defeated. It was approved that there should be an adequate representation on the committee of practitioners who had served in His Majesty's Forces during the recent war. The resolution as passed by the Representative Body has been accepted in the following terms by the Secretary of the Ministry of Health.

> The Minister wishes me to say that he has considered the terms of the resolution and will be glad if the Negotiating Committee will resume discussions with him, in the light of that resolution, at their early convenience.

So the matter stands at present, and it is understood that discussions have begun. Two other points should be mentioned. As stated above, some members of the Negotiating Committee were in favour of continuing discussions without any proviso as to the possibility of amending the act. At a recent meeting of the committee, at which the presidents of the colleges were present, the terms of the Minister's invitation were accepted. It would appear therefore that the British Medical Association resolution, including the holding of a second plebiscite as to giving service when all details are known, has been agreed to by the constituent bodies of the Negotiating Committee. This should ensure unity of purpose throughout the profession. The second point is that any opposition that was voiced to the Council's resolution at the Representative Meeting was on the grounds that it showed a weakening in the position previously held; a number of amendments were proposed, all of which were calculated to tie the hands of the Minister more firmly. Such proposals were opposed by Dr. Dain, Chairman of the Council, who denied any climbing down or weakening and promised that the representatives would withdraw if it appeared that the discussions were fruitless.

Nurses of the Empire and their War Memorial.

The form which war memorials are to take has been much in the news lately. Many schools are raising funds to be used to educate the children of men who have fallen, preferably at the school where the father was educated. In some cases the grants are limited to boys, but in others provision is made for girls to go to appropriate schools. The question of an Empire War Memorial has come up in Parliament, but the Government feels that any action to this end is premature just now. Two recent appeals are of special interest to Australians, not only for their possible practical value in the future, but also as showing the wish for a closer liaison between the constituent peoples of the Empire.

The Victoria League is planning to establish a new and larger headquarters in London as a "memorial to the men and women from the British dominions and colonies who volunteered to serve with us during the war and without whom we could not have survived". The intention is that such a house would be a second home for Empire visitors while in this country, and which would provide all that would make the stay of such visitors agreeable and profitable.

A letter appeared recently signed by officials of the British Empire Nurses War Memorial Fund. The appeal is described as affording "an opportunity for all of us to express our gratitude to the women who did so much for our people in sickness, in suffering, in peril and in every kind of adversity". A Nurses Memorial Chapel is to be set up and maintained in Westminster Abbey, but the main part of the fund is to provide travelling scholarships for nurses and midwives from all parts of the Commonwealth, who may wish for post-graduate training. The sum aimed at is £250,000, of which £50,000 will be used for the Memorial Chapel and £200,000 for the scholarships; already £35,000 has been contributed to this latter sum by nurses and midwives.

These are only two examples of what is being done to facilitate and make easy the path of the overseas visitors when in the Mother Country.

Shortage of Nurses and Midwives.

Many hospital beds, particularly in maternity wards, are empty in this country owing to the lack of nursing staff. During the war years many "V.A.D.'s" and other partially trained women helped out the permanent staffs, especially in rural areas, by doing part-time voluntary duty at the local hospitals. The work done varied according to the experience of the individual, and in many cases did not go beyond cooking, cleaning, serving meals, mending, washing-up, cutting and rolling bandages, but, by these means, much routine work was taken off the trained staff. This scheme has been expanded recently by the Gloucestershire County Council, but on a more ambitious scale, in that trained nurses and midwives are employed on a part-time basis and paid. The part-time people are asked to work as many shifts as they like in any week and the twenty-four hours are divided into four shifts, 8 a.m. to noon, noon to 4 p.m., 4 p.m. to 8 p.m. and 8 p.m. to 8 a.m. It was feared that the regular nurses on the hospital staffs would object to this new method, but it has been received enthusiastically as it means easier work and more regular off duty periods. The success in Gloucestershire has attracted a good deal of attention, and other hospitals are following suit. The Ministry of Health has taken the matter up and a conference of interested parties is being held with a view to a general extension throughout hospitals all over the country. Part-time State registered nurses and midwives, enrolled assistants and orderlies, are paid at a slightly higher rate than the corresponding grades under the Rushcliffe scale for the full-time staff, because the work is temporary, does not carry pension rights, and because the part-time worker does not get many of the emoluments that fall to nurses on the permanent staff such as residence, food, laundry, uniform and the like which are valued at £150 a year.

At first the part-time nurses were engaged mainly in the care of the chronic sick and of patients with tuberculosis, but the sphere of employment is being widened gradually; it is emphasized that they are used only on essential nursing duties. In the Gloucestershire scheme 68% of the nurses are in the thirty to fifty age group and 86% of them are married women of whom 80% have their own homes. The matron of a London hospital regards the part-time nurse as the answer to the problem of the care of the chronic sick and to that of the nurse who hates to give up her profession on marriage.

Well Done, "British Medical Journal".

Modern journalistic enterprise leaves one rather breathless, even in these days of speed. The following examples may be quoted in support of this contention. The Representative Meeting held at British Medical Association House on Tuesday, January 28, began at 10 a.m. and went on till nearly 7 p.m. The Council met the following morning, Wednesday, January 29, and copies of the journal for that week were available before the meeting began at 10 a.m., containing a full account of the proceedings of the day before, with synopses of what speakers had said.

As a result of the fuel crisis the printing of weekly periodicals has been banned for two issues. There is some doubt as to whether this prohibition applies to the *British Medical Journal*, as it is not a member of the Weekly Periodical and Trade Press Association whose journals were specifically mentioned, but the Editor of the *British Medical Journal* wisely decided to fall into line. The issue of February 15, 1947, appeared on Friday as usual, but in a somewhat smaller form. This was a good effort, as permission to publish was not given till the Tuesday, and even then the printers were still short of electrical power. The leading editorial concludes:

> At the time of going to press we understand that we shall not be able to publish the next two issues of the

journal, which during the two recent world wars was regarded as indispensable to the national effort. On May 10th, 1941, the journal's printers were destroyed by German bombs, but production of the journal continued uninterrupted. We regret that this time it looks as if it will be impossible to repeat "Operation Phœnix".

The issue of February 22, 1947, is probably unique. It consists of the two sides of a foolscap sheet "printed" by candlelight on hand-operated duplicators in British Medical Association House. Abbreviations are used freely and much discrimination has been shown in the selection of the subject matter included. All advertisements of vacant appointments are set out, but in a shortened form: thus A.R.O.O. (B1) & J.R.M.O. (B2) Queen Charlotte's, W.C. might easily be mistaken for a rather obscure clue in a crossword puzzle. Other items are a leader on "Coal and Medicine", points from letters, a diary of meetings, news, obituary, epidemiology and the popular "any questions". Even humour is not excluded as the following excerpt shows: "Adv. B.M.J. Feb. 1 wrongly stated price London Aberdonian's dinner (18s.) included wines. Aberdonian Secretary alarmed at mistake and demands for tickets." *The Times* comment runs: "The medical profession must congratulate the B.M.J. on its editorial ingenuity and refusal to give in."

Correspondence.

ASIATIC SCHISTOSOMIASIS.

SIR: With reference to the contribution on Asiatic schistosomiasis by Dakin and Connellan in the issue of March 1 it might be of historical interest that in 1908 Dr. H. Critchley Hinder was demonstrating cystoscopically the bladder changes in bilharziasis at the Royal Prince Alfred Hospital, and that amongst the urinary deposit slides in the final medical examination in 1909 was one showing the ova.

Yours, etc.,

ALDOUS C. ARNOLD.

Newcastle,
New South Wales,
March 5, 1947.

THE ZOOLOGICAL POSITION OF MAN.

SIR: If Criticus and the great majority of philosophers reject materialism—for Criticus declares, "I have not the space to refute materialism", and likewise asserts that "to attribute conceptual thought to the brain or any other organ is part of the philosophical theory known as materialism" and to which he is in apparent opposition—then it might be asked on what grounds both he and the philosophers in question distinguish between their own philosophy and what they are talking about, for words and philosophies could not be considered as an end to themselves with the world and universe open to investigation, analysis and comment, and as things obviously apart therefrom.

If a theory is to be entitled by a word or term the definition thereof, as provided by the author of the theory in question, will either be a true statement or a false one, and if the latter but prefaces the downfall of the theory, for natural law spurns fallacy, and words, when wrongly used, revenge themselves through the actions that follow.

Actually the word "materialism" has no signification other than thought energy verbally expressed as some philosophy (*ism, ic, ology, et cetera*) concerning things material, natural and physical—that is, not any particular theory—and in contradistinction to "spiritualism" which rightly signifies philosophies concerning God The Spirit and matters pertaining directly thereto—that is, in regard to things immaterial, supernatural and metaphysical—and generally referred to as religion—and which in point of fact cannot be embodied, except by means of man-made assumed representatives thereof, into terms of any reality other than the thought energy thus verbally expressed by mouth or pen.

If, then, Criticus would admit the existence of "conceptual thought", "the brain or any other organ" of the human body, on what grounds other than what the words in question signify could he "refute materialism", and with the exception of proving any such verbiage to be false, and when his own mental elevator would have to touch the ground floor again in order to explain the distinction between truth and fallacy when he or anyone else makes an assertion?

It is here, too, that Professor A. N. Burkitt's remarks in the "Conclusion" of his address, as reported in November 2, 1946, issue, are of striking importance, namely:

> And I hope you will bear with me if I, as a neurologist, quote Sherrington's words on what may well prove to be the final problem for man—namely, the relation between brain and mind, though I shall omit his final pessimistic note concerning man's doom.

I would suggest, however, that a more cheerful "problem of mankind" is to consider the connexion between "words" (philosophies) and "mind", and how the process of reason and mental outlook are influenced thereby on the one hand, and how character and conduct are largely shaped as a consequence thereof on the other, for it may reasonably be taken for granted that "mind" is a word signifying a group of closely allied functional activities in the brain duly fed with impressions per medium of the special senses. The neurologist, the psychologist and psychiatrist (as well as everyone else) are essentially concerned with this problem, for the reasoning process (part of mind) may be either frustrated or distorted through memorized educational philosophies, and, as such, may also be the means of prompting conduct that might lead through disease to brain lesions and the mental hospitals, to say nothing of misadventure generally and recurrent wars.

If mind is not part of the brain, what structure is this word supposed to signify?

There can be no way of illustrating states of mind due to environment other than by muscular action as speaking, writing, and by deeds otherwise, and the process of reason itself than by the relevant or irrelevant association of sentences in philosophy or, again, by the sequence of actions when no words are being used at all.

Dr. Alice M. Barber, in January 18 issue, touched this fundamental issue by drawing attention to the term "extra-sensory perception", and which illustrates in the use of words a confusion between special senses and mind (sensory perception) on the one hand and the environment apart therefrom (extra) on the other.

This confusion of structure through a wrong use of words is, I would suggest, again illustrated in Professor A. N. Burkitt's letter in February 1 issue, namely: "It is, then, I think, a fair working hypothesis, nowadays, that conceptual thought or mental experience on the one hand, and human brain happenings on the other, coincide in time and space, to paraphrase Sherrington again."

The words "a fair working hypothesis" could only suggest a premise and which would be either a true or false assumption, and which as such is really unable to "work" at all. "Conceptual thought" is thought energy from the mind following some "mental experience", and which latter is a "human brain happening" due to some cause inciting it, and all of which can only be made obvious to others by action as speaking, writing or otherwise doing something.

It is the "mental experience" and the "human brain happening" that "coincide", for the qualification "in time and space" opens up the definitions of these two hackeneyed words in terms of what they really do signify.

Science has marched from chipped stone to atomic bomb and the motive has ever been either to preserve life or to kill; but killing creates its own similar reaction, so cannot be founded on any but a false philosophy.

Science, then, must turn its attention to false philosophy as it is already well on its way to cleaning up the Augean stables of disease. No one more competent to do this than the practical neurologist, psychiatrist and psychologist and who could not reasonably be other than physicists and, therefore, materialists.

Yours etc.,

NORMAN PERN.

138, Darlinghurst Road,
Sydney,
February 26, 1947.

SIR: Having read "Criticus's" latest communication, I wish to state that I see no need to amend any part of my original letter. And my concluding sentence meant precisely what it said: it carried no wider implication other than "Criticus" supplies from his own imagination. Incidentally, his ideas on the tone of evolutionary polemics of the last century stand in need of revision.

Both G. Boyd and "Criticus" seem to labour under the impression that I was concerned to defend the fact of evolution. I was not: it is not evolution that requires apologists today. I was concerned, however, to rebut the superficial criticism by which "Criticus" sought to discredit Professor Burkitt's very fair summary of our present knowledge on human evolution.

G. Boyd is frankly anti-evolutionist and his frankness deserves respect. From the tone of his letters, and particu-

larly from the concentration of his attack upon the geneticists who have supplied most of the recent verification of Darwin's views, I must conclude that "Criticus" is also anti-evolutionist, and of the type to whom the terms "materialist" and "mechanist" mean something. Had this been clear at the outset I should not have engaged in such profitless correspondence, for I have not the space to refute anti-evolution.

I have read Huxley—"Evolution: The Modern Synthesis"—and reafirm my concurrence in Professor Burkitt's appraisal of that work. I suggest that "Criticus" add to his collection White's "Animal Cytology and Evolution", 1945 (Cambridge University Press). There he will find the answer to at least some of the problems that beset him; he will discover, too, that the gene is far from being the hypothetical postulate he would have his readers believe.

Yours, etc.,

A. A. ABBIE.

Department of Anatomy,
University of Adelaide,
South Australia.

March 4, 1947.

TETANUS IMMUNIZATION.

SIR: Several colleagues have asked me to report a case of tetanus with recovery in a Japanese prisoner-of-war camp, because it occurred in a prisoner who had not received the usual immunization.

For two years many of the camp population of some 650 received dirty, slow healing and badly treated wounds while working at wharves, goods sheds, muddy goods yards, and in factories, in all of which places horses were frequently used for transportation of goods. No prophylactic tetanus antitoxoid was ever available. Slow healing was attributed to ill-nourishment. Bad treatment was due to a hopelessly inadequate supply of medicaments from our hosts. Pus was always in abundance in all seasons and tetanus was conspicuously absent, although two cases (with recovery) of anthrax were encountered.

British from Hong Kong, Australians from Malaya and American army personnel from Manila had all received routine tetanus immunization. One American prisoner was a naval man and navy men do not receive this treatment.

A group of merchant seamen numbering twenty-three, speaking thirteen different languages, and unloaded in Japan from a German raider, were such skilful work avoiders that they never sustained work injuries; and had never been immunized. Work injuries were frequent among British, Australians and Americans, and in May, 1945, the single non-immunized American naval rating exhibited undoubted tetanus ten days after a severe crushing of his right second toe.

Treatment was successful with Japanese material of unknown composition and strength.

Spasms were exceedingly painful and increasingly severe for the first two weeks, to subside slowly over the following three weeks, leaving a little stiffness on widely opening the mouth. Frequent near bombings, and on June 6 demolition of the camp by bombs, followed by eight miles of stretcher carriage, were not aids to treatment. During the stretcher trek of over five hours the patient's condition with spasms was pitiable, but no palliative treatment was possible. A small stock of chloroform (from Malaya) and some chloral hydrate looted from a Japanese goods shed were used to minimize spasms.

Feeding was managed through a gap in the patient's teeth using rice gruel in a teaspoon. A grateful patient asked could he retain my teaspoon (also from Malaya) to take home to America as a souvenir.

Summary.—The one non-immunized, in a camp of over six hundred immunized, over a period of more than two years, all subject to work injuries from which tetanus could be anticipated, contracted tetanus.

Yours, etc.,

C. R. BOYCE,
Medical Superintendent.

Mental Hospital,
Toowoomba,
Queensland.

February 26, 1947.

YAWS AND SYPHILIS.

SIR: In his article "Centenaries of 1946" in the journal of February 22, page 233, Professor Harvey Sutton makes a cursory reference to the introduction of syphilis into Europe, following the return of Columbus's sailors from the discovery of America (Haiti).

How the sailors contracted the disease is thus described by Haggard:

> One of the earliest records of tropical medicine was made by Gonsala Fernandez de Oviedo. He was raised among the pages in the palace of King Ferdinand and Queen Isabella [of Spain], and was at Barcelona in 1493 when Columbus returned from the island of Haiti. He was intimately acquainted with most of the men who had made the voyage and many of them he knew were ill of a disease which they had contracted in America. Twenty years after Columbus's voyage Ferdinand sent Oviedo to America as superintendent over the gold and silver mines. After a residence of twelve years Oviedo wrote a natural history of the Spanish possessions and dedicated it to Emperor Charles V. He describes a disease known as bubas, or yaws, which, he says, is a very ancient disease in those localities. Oviedo identifies bubas with syphilis, for he says bubas is "no other than the pocks (syphilis) which rageth and hath power over all Europe, especially among the Frenchmen. . . . I can assure your Imperial Majesty that this disease which is new in Europe is well known in the Antille islands lately discovered, and so very common there, that almost everyone of the Spaniards who lay with the Indian women contracted it from them. Thus it was imported from thence into Spain by those who returned with Columbus after his first or second voyage".

We now know that the causative organisms of the two diseases—the *Treponema pallidum* of syphilis and the *Treponema pertenue* of yaws—are morphologically indistinguishable and that the lesions of the diseases are extremely difficult to differentiate.

Moreover, syphilis is absent, uniquely, from amongst the Polynesians of Fiji, Tonga and Samoa, amongst whom yaws is especially prevalent.

Stitt writes:

> There is convincing evidence that an individual who has acquired immunity to yaws is also immune to syphilis, and vice-versa.

Stitt also cites the morphological identity of the two organisms, the common serological reactions, the cross immunity, the response to the same therapy, as well as the general similarity of the experimental lesions and the clinical manifestations of the two diseases, as convincing evidence of their intimate relationship or identity.

Yours, etc.,

March 3, 1947. HISTORICUS.

Bibliography.

H. W. Haggard: "Devils, Drugs and Doctors", 1929, pages 236-237.

P. Manson-Bahr: "Manson's Tropical Diseases", Tenth Edition, 1935, pages 588-589.

E. R. Stitt, P. W. Clough and M. C. Clough: "Practical Bacteriology, Hæmatology and Animal Parasitology", Ninth Edition, 1938, pages 157-158.

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Stanger, Donald James, M.B., B.S., 1944 (Univ. Sydney), 11, Wolseley Road, Mosman.

Rogers, Peter Augustine, M.B., B.S., 1946 (Univ. Sydney), Mater Misericordiæ Hospital, Crow's Nest.

Yuill, Kenneth Buchanan, M.B., B.S., 1946 (Univ. *Sydney), Dubbo Base Hospital, Dubbo.*

The undermentioned have been elected members of the *New South Wales Branch of the British Medical Association:*

Colman, John Victor Leonard, M.B., B.S., 1946 (Univ. Sydney), 233, O'Sullivan Road, Bellevue Hill.

Constance, Theodore Jack, M.B., B.S., 1936 (Univ. Melbourne), 113 A.G.H., Concord.

Hession, George Edward, M.B., B.S., 1946 (Univ. Sydney), *Saint Vincent's Hospital, Darlinghurst.*

McCarthy, William Justin, M.B., 1945 (Univ. Sydney), 35, Montague Street, Goulburn.

Polk, Levie, registered under Section 17 (b) of the Medical Practitioners Act, 6, Hampstead, 286, New South Head Road, Double Bay.

Parker, Richard Grey Vernon, M.B., B.S., 1939 (Univ. Sydney), 738, New South Head Road, Rose Bay.

Strauss, Hugo, registered under Section 17 (b) of the *Medical Practitioners Act, Bulahdelah.*

Tindale, Harold Patrick, M.B., 1945 (Univ. Sydney), 81, Darling Point Road, Darling Point.
Whealy, Elizabeth, registered under Section 17 (b) of the *Medical Practitioners Act*, 164, New South Head Road, Edgecliff.

The undermentioned have applied for election as members of the South Australian Branch of the British Medical Association:

Condon, Robert Francis, M.B., B.S., B.Sc., 1946 (Univ. Adelaide), 29, Hampton Street, Hawthorn.
Rowe, Fletcher David, M.B., B.S., 1946 (Univ. Adelaide), 22, Norman Street, Port Pirie.

The undermentioned has been elected a member of the South Australian Branch of the British Medical Association:

Faunce, de Marcus Loune, M.B., B.S., 1946 (Univ. Adelaide), 42, Glenunga Avenue, Glenunga.

Obituary.

HAROLD SEWARD MARSH.

WE regret to announce the death of Dr. Harold Seward Marsh, which occurred on March 16, 1947, at Double Bay, New South Wales.

Honours.

HIS MAJESTY THE KING has been pleased to appoint Professor B. T. Mayes, Dr. H. R. G. Poate, Dr. L. F. Dods, Dr. A. O. Davy and Dr. C. C. Findlay as Members of the Royal Victorian Order, Fourth Class.

THE FEDERAL MEDICAL WAR RELIEF FUND.

THE following contributions to the Federal Medical War Relief Fund have been received:

New South Wales.

A. C. Herrington, £10.
R. Nihill, £3 3s.
Royal Australasian College of Physicians and Royal Australasian College of Surgeons War Service Fund, £2,563 16s. 1d.
Total: £2,576 19s. 1d.
Grand total: £18,785 13s. 10d.

Notice.

THE BEATTIE SMITH LECTURES.

THE Beattie Smith Memorial Lectures, endowed by a benefaction received by the University of Melbourne in 1922 under the will of the late Dr. William Beattie Smith, are to be delivered this year by Dr. Guy Springthorpe on Monday, April 21, and Monday, April 28, in the anatomy lecture theatre, University of Melbourne. Professor P. MacCallum, Dean of the Faculty of Medicine, will preside at both lectures. The subject of the lectures will be "Some Aspects of Child Development and Mental Health", and the second lecture will deal with the National Fitness Lonsdale Health School. Members of the medical profession are invited to attend.

Books Received.

"Clinical Methods of Neuro-Ophthalmologic Examination", by Alfred Kestenbaum, M.D.; 1946. New York: Grune and Stratton. 9" x 6", pp. 394. Price: $6.75.

"Materia Medica for Nurses", by Lois Oakes, S.R.N., D.N., and Arnold Bennett, M.P.S.; Second Edition; 1947. Edinburgh: E. and S. Livingstone, Limited. 7¼" x 5", pp. 363. Price: 7s. 6d.

"Textbook of Medicine", by Various Authors, edited by Sir John Conybeare, K.B.E., M.C., D.M. (Oxon), F.R.C.P.; Eighth Edition; 1946. Edinburgh: E. and S. Livingstone, Limited. 8¾" x 5¾", pp. 1178. Price: 30s.

"The Differential Diagnosis of Jaundice", by Leon Schiff, Ph.D., M.D.; 1946. Chicago: The Year Book Publishers, Incorporated. 8" x 5¾", pp. 320, with illustrations. Price: $5.50.

"Forensic Chemistry", by Henry T. F. Rhodes, Dip.Inst.C. (Lyon); Second Edition; 1946. London: Chapman and Hall Limited. 8¾" x 5¾", pp. 174. Price: 15s.

"A Short Handbook of Practical Anæsthetics", by Hoël Parry-Price, M.R.C.S., L.R.C.P., D.A. (R.C.S.), with a foreword by Cecil P. G. Wakeley, C.B.; 1946. Bristol: John Wright and Sons, Limited. London: Simpkin Marshall (1941), Limited. 7¾" x 4¾", pp. 136, with illustrations. Price: 12s. 6d.

Diary for the Month.

MARCH 25.—New South Wales Branch, B.M.A.: Council Quarterly.
MARCH 26.—Victorian Branch, B.M.A.: Council Meeting.
MARCH 27.—South Australian Branch, B.M.A.: Clinical Meeting.
MARCH 27.—New South Wales Branch, B.M.A.: Annual Meeting.
MARCH 28.—Queensland Branch, B.M.A.: Council Meeting.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute; Brisbane City Council (Medical Officer of Health). Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

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